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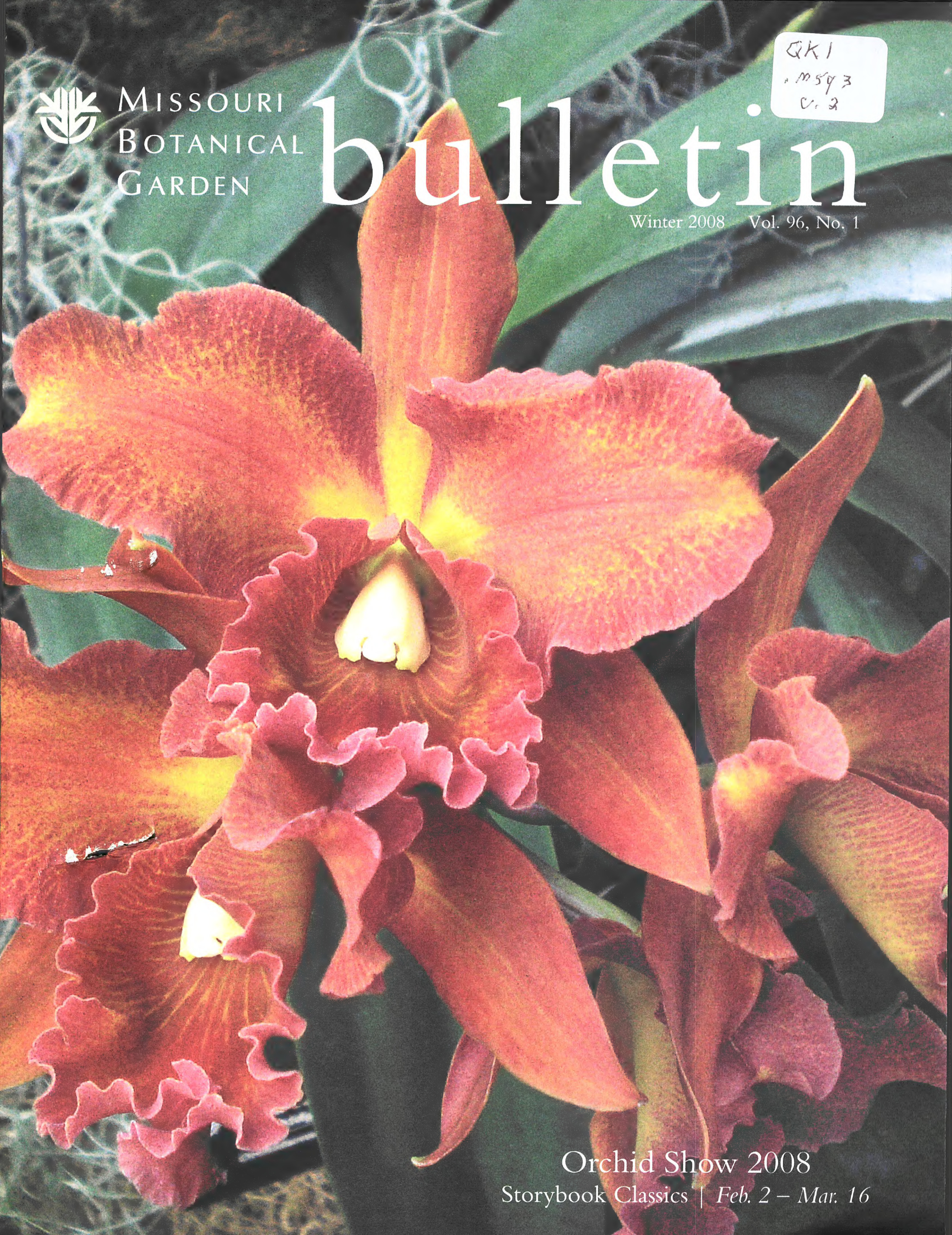
Missouri Botanical Garden

bulletin

Winter 2008 Vol. 96, No. 1



Orchid Show 2008

Storybook Classics | *Feb. 2 – Mar. 16*

photo by Kristi Foster

President's Comment

Even when the plants outside are "asleep," we are in a state of great activity here at the Garden. The Gardenland Express holiday flower and train show, with its wonderful national park theme, has drawn to a close, and we are looking ahead to much excitement in 2008.

This year's orchid show, "Storybook Classics," opens February 2. Mid-February is peak bloom of the camellias in the fragrant Linnean House (for more on fragrance, see page 10). We welcome an early Mediterranean springtime inside the Temperate House, and then in April, spring outside on the grounds with a display of over 90,000 bulbs.

In addition to the wonders of the natural world in April, the Garden will unveil the sculpture exhibit *Niki* These colorful mosaic sculptures by French pop artist Niki de Saint Phalle are a delight to adults, who admire their whimsical beauty, and to children, who are encouraged to touch and climb on many of them.

This season, take a tour of other members of the Garden's family tree. The Sophia M. Sachs Butterfly House features its annual winter "Hot, Hot, Hot!" tropical get-away. Shaw Nature Reserve unveils a new Nature Explore Classroom™. The EarthWays Center offers everything an interested citizen might want to know about "Sustainability 101." As we look to the future, we should all keep our focus on this important word—sustainability—as we strive to find solutions to the challenge of global warming.

Thanks are due to Nicholas Reding and Carolyn Losos for a very productive year of service as chair and vice-chair of the Garden's board of trustees. Thanks as well to all our many supporters for another wonderful show of year-end support.

Peter H. Raven

Dr. Peter H. Raven, *President*

To discover and share knowledge about plants and their environment, in order to preserve and enrich life.

–mission of the Missouri Botanical Garden

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We proudly introduce the new seasonal *Bulletin*. This is the winter issue, covering January, February, and March. It seems only fitting that a botanical garden publication should align with the seasons, and it's allowed us to expand the magazine, offering more in-depth features on important topics. New departments abound, such as Green Living, History, and the Kidstuff activity for school children. We welcome your feedback on the changes—so e-mail comments to elizabeth.mcnulty@mobot.org—and have a happy new year! –Ed.

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Table of Contents

6–8 Science & Conservation
Foods of our Fathers, Yanesha Children in Peru

10–12 Home Gardening
Fragrantia deliciosa, Scented Plants for Indoor Cheer

18–19 Education
Babes in the Woods, Plant-based Learning

Departments

From the President 2
Sustainability Statement 3
News 4-5
History 9
Green Living. 13
In Your Garden Now 14-15
Kidstuff (for kids) 17
Family of Attractions 20–22
Tributes 23–24
Events & Calendar. 25–31

Sustainability Statement

The Missouri Botanical Garden strives to make the most sustainable choices for the future of people, plants, and the planet. The Missouri Botanical Garden *Bulletin* is printed on paper containing 100% post-consumer recycled content, that is, paper that you might have placed in the recycle bin in your home or office this year. It is manufactured using wind power, a renewable energy source. We print locally, so there is less long-haul transportation and we're reinvesting in our community. Make a new year's resolution to improve your environment by recycling more, using less, buying recycled/fair trade/locally grown/organic, planting a tree, or volunteering.

News

New in 2008: *Niki* in the Garden!

Niki de Saint Phalle, Nikigator (2001). *Photographed at the Atlanta Botanical Garden 2006. Niki Charitable Art Foundation. Photo: Justin Larose*

From April 27 through October 31, the Garden welcomes the passionate pop art of Niki in the Garden, an exhibition of 39 playful, larger-than-life mosaic sculptures in a rainbow of colors and materials. Gathered from around the world, and placed throughout the garden and Climatron, *Niki* works include nanas, animals, heroes, and totems, ranging from four to 18 feet tall. Some weigh a ton or more, such as the amazing six-ton skull. Read more about the artist and her work at nikidesaintphalle.org.

Volunteers Needed Be a part of a very special exhibition! From April 27 to October 31, volunteers are needed to serve as *Niki* hosts, trained to share knowledge about the artist, her sculptures and mosaics, enriching the experience for adults and children. Shifts are available seven days a week, morning or afternoon, on days, evenings, and weekends. For details, call (314) 577-5187 or e-mail jackie.juras@mobot.org.

Victorian District Update

Last spring, the Garden received a substantial gift to unify and enhance the historic areas of the southeast Garden as the Doris Waters Harris Lichtenstein Victorian District. Work is well underway this winter. New brick and aggregate paths have been installed, as has new lighting. Graceful columns mark both north and south entrances to the area, and the new Victorian pincushion garden beds await the touch of spring.

photo by Justin Visnesky

New Plants of Merit Coordinator

In October, Chris Nejelski joined the Garden staff as Plants of Merit™ coordinator. A horticulture graduate of Kansas State, Chris worked previously for 15 years in the green industry, including continued involvement in the St. Louis Horticulture Co Op and Greater St. Louis Flower Growers Association. "I've been following the Plants of Merit program for many years and look forward to contributing to its continued success!"

Supported in part by the Kemper Foundation, the Missouri Botanical Garden Plants of Merit program aims to raise the public's awareness of beautiful and environmentally friendly plants for the home landscape.

Henry Shaw Medal Awarded

Awarded since 1893 and named for the Garden's founder, the Henry Shaw Medal honors those who have made a significant contribution to the Missouri Botanical Garden, botanical research, horticulture, conservation, or the museum community. In 2007, the Garden honored two individuals.

photo by Josh Monken

Evelyn E. Newman
A visionary philanthropist, Evelyn helped found the Sophia M. Sachs Butterfly House. Her endless creativity has sparked the founding of other nonprofits and fundraisers, including: Forest Park Forever, Gypsy Caravan, the ScholarShop, Greater St. Louis Book Fair, and the Little Shop Around the Corner.

photo by Josh Monken

Jack Jennings
Volunteer photographer for over 30 years since he retired from McDonnell Douglas, Jack founded the beloved Missouri Botanical Garden wall calendar in 1981. The 2008 calendar marks Jack's second retirement.

photo by Kevin Wolf

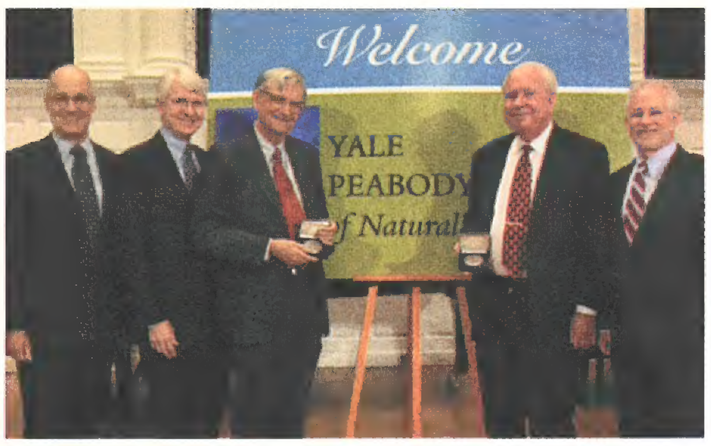
Sign up in February for exciting classes for adults, kids, and families.

Sign Up Soon

Get growing this spring with a variety of classes on specialty gardens, plant care, landscaping, indoor gardening, and more, all at the Garden. There's even a weekend "Gardening Blitz," if you're ready to "spring" into action.

This season's course catalog is even bigger and more stuffed with oodles of mind-enriching fun, such as classes on birding, photography, the what and why of "fair trade," Chinese calligraphy, wine and chocolate, and more! Your catalog also contains information on youth and family programs for spring and summer.

Classes fill up quickly, but Garden members enjoy early enrollment—as well as discounts of up to 20 percent—so watch your mailbox in February, or log on to www.mobot.org/gardeninghelp.



Verrill Medal Awarded

Last fall, the Peabody Museum of Natural History at Yale University awarded their highest honor, the Verrill Medal, to Garden president Dr. Peter Raven for outstanding achievement in the natural sciences. Noted Harvard environmentalist Edward O. Wilson also received the award. Raven and Wilson received their awards on October 17 during a program they jointly presented at Yale entitled "The Future of Life on Earth."

photo by Josh Monken

New WLBC Director

In November, the Garden named Dr. Rainer W. Bussmann the new head and curator of of economic botany the William L. Brown Center for Plant Genetic Resources (WLBC). Formerly of the University of Texas, Austin, Dr. Bussman focuses his scholarship on conservation and ethnobotany, the study of the interaction of plants, people, and the environment. "The Missouri Botanical Garden's program in plant science and conservation is internationally renowned, and I look forward to helping focus and elevate our very important initiatives to conserve plants that could one day result in medicines or other economic benefit."

The WLBC is dedicated to the study of economic plants and the conservation of traditional knowledge to benefit future generations. Public-private collaborations of the Center aim to develop new crops, nutritional supplements, and drugs. Read more about the WLBC online at www.wlbc.org.

New Grant Improves eFloras.org

A new grant from the Institute of Museum and Library Services will allow the Garden to expand and enhance eFloras.org, an online version of floras from around the world. A flora is a comprehensive, systematic account of the plant species of a given area. Floras document the plant life that exists in a certain region and in a certain time period, information of crucial importance for making conservation decisions.

While once printed as paper monographs and books, floras are today migrating rapidly to the Internet. "This grant will allow us to integrate efloras.org with the Garden's Tropicos database," says Chris Freeland, the Garden's Application Development Manager. "The end result will improve the collaborative collection of data and increase availability of this information around the world."

photo by Josh Monken

The 25 Club

If staff retention is a measure of an institution's success, then the Garden is pleased to announce that 17 science and conservation curators and staff have reached and even surpassed the quarter-century employment anniversary. Staff are listed with their years of service in parenthesis. Front row from left: Dr. Gerrit Davidse (35), Jeany Davidse (26), Amy Pool (26), Leonardo Mourre (43). Middle row: Mary Merello (25), Carla Kostelac (25), Dr. James Solomon (26), and Ron Liesner (35). Back row: Dr. Robert Magill (25), Dr. Peter Hoch (30), Dr. Marshall Crosby (39), Dr. Gordon McPherson (28). Not pictured: Dr. Tom Croat (40), Dr. Peter Goldblatt (35), Barb Mack (32), Dr. Doug Stevens (30), and Dr. Henk van der Werff (25).

photo courtesy Dr. Tom Croat

Garden Researcher Reaches 100,000 Collections

Botanical researchers spend significant time collecting plant specimens in the wild. Yet perhaps only four individuals in history have been so zealous in the field long enough to reach the 100,000 collection mark. Senior curator Dr. Tom Croat, a 40-year veteran of the Garden's science and conservation team, became a member of this elite group during a collecting trip to Ecuador in late 2007.

The 100,000th specimen is a new species of gigantic anthurium with leaves 4 feet long. It was collected in the Ecuadorian province of Pichincha. A specialist in Aroids, the Philodendron family, Dr. Croat was traveling with Dan Levin of the International Aroid Society and graduate student Monica Carlsen.

"Working with a large and exciting group of plants helped lead me to places where I had never been before and of course, this led to finding more collections overall," says Croat in explanation of his achievement. In the course of his adventures, Croat has traveled "a large percentage" of the roads in Latin America. "If you dropped me blindfolded almost anywhere I could figure out where I was from the plants occurring there."

Among botanists who have reached 100,000 collections is another Missouri Botanical Garden scientist, Dr. Julian A. Steyermark (1909–1988), who is credited in the *Guinness Book of World Records* with collecting 138,000 plant specimens during his lifetime.

Food of our Fathers

Yanesha Children Grow Plants, Nutrition, and the Future

Today, in every country on Earth, species are becoming extinct at an unprecedented rate. The work of Missouri Botanical Garden scientists creates the foundation for conservation, and community-based efforts empower local populations to protect the future for us all.

At the headwaters of the Amazon in the *selva central* (central forest) of Peru, lie the ancestral homelands of the Yanesha.

The Yanesha, which means "we people," have lived in the eastern foothills of the Andes for over 2,000 years. Despite domination by the Incas, and later by the Spanish, the Yanesha have maintained a traditional way of life, hunting, fishing, and subsistence agriculture adapted to the narrow valleys of the upper Peruvian Amazon.

However, the construction in 1984 of the marginal road, which passes by several native communities, led to an influx of colonists and outside influences. Over the last 24 years, the Yanesha have faced pressure from logging interests, the military, druglords, and practices that are foreign to the group, such as cattle-raising and non-traditional agriculture.

photo by Rodolfo Vásquez

A girl and boy in traditional Yanesha attire, the brown cotton cushma, *pose with their class at San Francisco de Pichanaz beside the vegetable garden.*

"Our most important food is yuca, but the earth is no longer producing it the way it should."

says Yanesha filmmaker Valbina Miguel Toribio, director of a documentary on Yanesha history and culture.

Traditional Yanesha culture and beliefs are based strongly on natural resources, and older members of the communities have retained the knowledge of how best to manage their biological heritage. But the changes of the late 20th century have had a negative impact on the environment and on Yanesha youth.

Orchids are perhaps the botanically least known group in Peru's selva central. *Above,* Ponthieva vasquezii, *a new species in honor of Garden curator Rodolfo Vásquez.*

MBG-Peru

The Missouri Botanical Garden has been active in Peru since 1975, conducting an intensive program of collecting plants, training local students, and gathering ecological data. During the last five years, the Garden has worked in the *selva central* and has established there a growing herbarium of over 30,000 plant specimens. Today, curator Rodolfo Vásquez leads a staff of 27 Peruvian botanists, trained specialists, and graduate students.

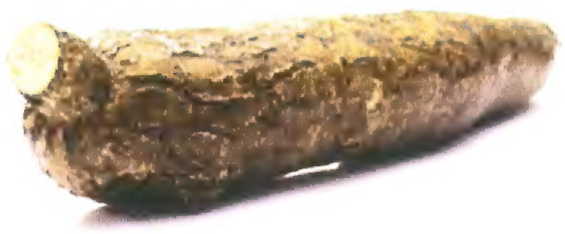
Food of Our Fathers

In 2001, working with the Garden's Center for Conservation and Sustainable Development (CCSD), staff in Peru began a long-term community conservation project to help the Yanesha manage their resources sustainably but applying traditional knowledge and practices.

The Yanesha are a small community—they number just 7,000 people, or 3 percent of Peru's indigenous population—but because of their location, they are pivotal for conservation. The lands of the Yanesha in the Palcazu River Valley rest between the Yanachaga-Chemillén National Park and the San Matías-San Carlos Protected Forest.

This remote location in the *selva central* is a 17–20 hour bus ride from Lima, depending on the condition of the precarious roads, which are prone to

mudslides in the rainy season. It is one of the centers of highest plant diversity in Peru, but also one of the most unexplored and poorly known. New species are identified on almost every botanical field trip.



Whether you call it yuca, cassava, or manioc, this starchy tuberous root is the third largest source of carbohydrates in the world. Native to South America, Manihot esculenta *is a woody shrub in the Euphorbiaceae family.*

While previously the Yanesha lived in harmony with the natural world, traditional agriculture gave way to less sustainable methods. Economic crops such as coffee have degraded the soil, traditional fallow periods go unobserved, and more and more land is carved from the jungle. The Yanesha now face the diminishing harvest of their most culturally important crop—yuca, or cassava root.

Together with the Yanesha people, Garden conservationists have created an integrated program of environmental education and sustainable development. The program provides community-wide workshops, educational materials, and videos, and includes the piloting of alternative economic crops, such as 25 different native fruit trees in community tree nurseries. Another facet of the Yanesha community conservation effort is the program for school children.

Since 2004, over 400 children have participated in classroom lessons and field excursions. Children learn about native plants and trees—how to identify then, how they are used, and why they are important to protect. Children also plant a school garden with their mothers and teachers, and learn about health and nutrition, while witnessing the life cycle of the plants—and reaping the rewards of fresh radishes, cucumbers, and tomatoes.

"We love trees, and even *rabanitos* (radishes)," says Amalia Quicha Ramos, 8. "It is important to have healthy bodies and a healthy planet," adds her young conservationist friend Luis Bautista Crispín, 10. ■

Fast Facts: Peru

Location: west coast of South America, between Ecuador and Chile

Geographic Area: 1.28 million sq. mi. (just slightly smaller than Alaska)

Capital: Lima

Population: 28.6 million

People: 45% Amerindian, 37% Mestizo (Amerindian and white), 15% White, 3% Black, Asian, other

Languages: Spanish and Quechua (official), Aymara and a large number of Amazonian languages

Money: Nuevo sol [1 USD = 2.9 PEN]

Politics: Ancient Incan empire captured by the Spanish conquistadores in 1533. Declared independence from Spain in 1821. Alan Garcia Perez was elected president in July 2006.

Exports: fishmeal, gold, copper, zinc, petroleum products, lead, coffee, sugar, cotton

photo by Rodolfo Vásquez

Yanesha mothers and children display the harvest. School and community vegetable gardens offer an affordable way of improving the diet of Yanesha families and reducing the harvest of wild flora.

Why Does it Matter?

In poor indigenous communities, "poverty screams louder than the message of conservation," notes a Garden scientist. The Yanesha communities in the central forest of Peru rely heavily on agriculture for income. The result is over-harvesting of native trees and burning the forest to make room for economic crops such as coffee. Peru is also one of the world's top ten biodiversity "hot spots," with a high percentage of unique plants, but only a fraction have been recorded for science. Without scientific documentation, plants are unlikely to be subjected to routine analysis for medicinal, nutritional, and other properties—and they are unlikely to be included in conservation plans for the future.

How You Can Help

Your membership helps fund worthwhile conservation programs around the world. Other things you can do: consider buying organic, fair-trade coffee and chocolate, or fair-trade artisan goods such as the line of knitwear currently available in the Garden Gate Shop. The fair trade movement promotes the payment of a fair price to workers in the developing world, as well as social and environmental standards related to production.

History

First open to the public in 1859, the Missouri Botanical Garden is a National Historic Landmark and the oldest botanical garden in continuous operation in the nation. The year 2009 will mark the Garden's 150th anniversary, or sesquicentennial (from the Latin sesqui, one and a half, and centum, hundred). Throughout 2008, we will explore interesting aspects of the Garden's history.

The Logo

The Garden's logo is one the most recognizable in St. Louis, so most people are surprised to learn it is a relatively recent creation. In 1972, the new director Dr. Peter Raven, of barely a year's tenure at the time, contacted Charles P. Reay of local architecture and design firm Hellmuth, Obata, and Kassabaum, Inc. Raven was concerned about the public face of the institution. "It was quite a smooth process," say Reay, now retired from HOK and the principal of his own firm. "We spoke about his wide-ranging vision for the Garden, and a month or so later, we had the logo. No testing, no alternatives."

The logo was introduced that summer and is still in use today. The only adjustment has been the font, which was updated in 2004 (see below). The new font (Optima) is considered sophisticated, but reminiscent of calligraphic pen strokes, thus suggestive of both the Garden's history, as well as the Garden's leadership role in contemporary plant science and conservation. "The mark continues to be as relevant as the first day I drew it," says Reay. "Its essence, the unity of nature and man are timeless."

A Symbol for Missouri Botanical Garden

(from the July 1972 Bulletin)

The genesis of the mark is the folk symbol for man.

Compounded to become men (mankind) abstracted to become plant form (botanical). Reflecting the Garden's dual concerns for man and the natural world. The inseparable nature of both and, most importantly, their "oneness."

Also the process of research.

A seed pod.

Germinating. Seeking the common denominator in the plant kingdom, the point at which most things look alike, so as to represent the entire kingdom and not one part...newness...growth.

The two forms brought together...and divided, symbolizing in their separateness plant and man, in their symmetry or reflection the interdependence of one upon the other to create a whole, a mutual reinforcement. Again, "oneness."

The curved lower line: the garden as holding, cradling, nurturing the whole: the earth.

The Symbol was designed by Chip Reay, of Hellmuth, Obata, and Kassabaum, Inc.

Delight your senses with a stroll through the Linnean House, where over 50 different kinds of camellias are now in peak bloom. That wonderful fragrance? Not the camellias. The signature scent of the Linnean House comes from the fragrant olive trees, Osmanthus fragrans.

Fragrantia deliciosa

Scented Herbs for Indoor Cheer

"A rose is a rose is a rose," wrote Gertrude Stein, but scientists have now discovered that no two people smell the same odor in quite the same way. In fact, a rose by any other name may smell even sweeter to your neighbor. Once considered a lesser sense compared to sight and hearing, smell actually plays a vital role in our sense of well-being and quality of life.

Every time we inhale, chemical molecules on the air swirl up through the nostrils to a postage-stamp-sized sheet of olfactory receptor neurons. Each receptor has a pocket that is just the right shape to bind to a specific molecule, sending an electrical signal to the areas of the brain that perceive smell.

As Proust intuited with his madeleine cookie, smell is hard-wired deep into sensitive areas of the brain: the amygdala, which is involved in emotion, and the hippocampus, which is involved in memory. People recall smells with 65 percent accuracy after a year, while the visual recall of photos sinks to about 50 percent after only three months. Most of what we experience as taste is actually smell.

Pleasant scent is an instant mood-enhancer. Whether you are strolling through the lush Orchid Show, the peak bloom of camellias in the Linnean House, or the Climatron® indoor rain forest, engaging your sense of smell can be a therapeutic experience—as can growing fragrant plants at home. Many fragrant plants are flowering plants, and many flowering plants require oodles of care to flower and become fragrant. However, even the relatively novice gardener can grow a deliciously fragrant windowsill herb garden—or if you prefer, a natural air freshener.

The Nose Knows

- Humans can recognize up to 10,000 odors.
- Sense of smell is least acute in the morning and improves as the day wears on.
- A woman's sense of smell is keener than a man's.
- Sense of smell diminishes with age.
- The total loss of smell is called *anosmia*.

Windowsill Herb Garden

Herbs are among the easiest plants to grow and thrive with minimal care. All that most herbs require for healthy growth is a sunny location and well-drained soil. Select your sunniest window, typically south or southwest exposure. Be certain not to locate your indoor herb garden near a radiator or heating vent, as herbs prefer temperatures below 70 degrees F. Use clay pots and a potting mixture of equal parts sand, commercial potting mix, peat moss, and perlite. Feed potted herbs lightly only occasionally. Overfeeding is far more likely to damage your herbs than too little. Rotate the pots every three to four days to ensure uniform growth.

Some fragrant herbs to grow as house plants:

Basil (*Ocimum basilicum*) is an annual that does nicely indoors if pinched back and not allowed to flower. Basil prefers soil that is kept barely moist. Fertilize monthly. Purple varieties available.

Chives (*Allium schoenoprasum*) are perennial plants that prefer a very sunny location, plenty of moisture, and occasional feeding.

Mints (*Mentha* sp.) are good perennials for indoors since they tolerate a minimum of two to three hours of sun and wet soil. There are more than 500 fragrant varieties, including apple, pineapple, and even chocolate.

Oregano (*Origanum vulgare*) is a perennial herb that trails over the sides of the pot. Requires a great deal of sunlight, but will tolerate dry soil and neglect.

Parsley (*Petroselinum crispum*) is a biennial that can be grown indoors in partial shade or full sun. Keep parsley well-watered, especially when young.

Rosemary (*Rosmarinus officinalis*) is a perennial plant that can be grown indoors with less light than most herbs. Do not allow the soil to dry out and feed regularly with a dilute fertilizer.

Sage (*Salvia* sp.) is a perennial that prefers a sunny location and well-drained soil. Water thoroughly, but allow to dry out before watering again. Pinch back to keep the plant compact. Available in purple and in fragrances like pineapple.

Thyme (*Thymus* sp.) is a sturdy, low-growing perennial, which needs sun and does not tolerate low humidity. Miniature and lemon varieties are available.

When springtime rolls around, you can plant your herbs outside too. Herbs are a good choice for the environmentally-minded gardener as they generally require little water and fertilizer. They are relatively free of pest and disease problems and often act as natural insect repellents in the vegetable garden. When integrated into the lawn, herbs lessen dependency on herbicides and fertilizers. They are beneficial in the flower garden as well, attracting pollinators such as butterflies, bees, and hummingbirds. ■

The Scented Garden features fragrant and textured flowers, as well as sonorous sculptures and fountains.

Zimmerman Scented Garden

Located just past the Linnean House along the stone wall, the Zimmerman Scented Garden features strongly scented flowers and herbs, such as lavender, jasmine, chocolate mint, and more. Fuzzy plants, such as lamb's ear, are chosen for their tactile pleasure. The ringing of the *Bell Chimes* sculpture and the rustling of the nearby fountain delight the ears. Signs include braille and raised letters for the visually impaired, and beds are raised for visitors in wheelchairs.

Therapeutic Horticulture

Horticulture Therapy (HT) uses plants and garden-related activities to enhance the physical, mental, and social lives of participants, and is effective for people of all backgrounds, ages, and abilities. On Garden grounds, HT programs often take place in the Zimmerman Scented Garden, where scents can trigger memories of childhood or a special person, providing a sense of well-being, calm, or even invigoration. To learn more about the Garden's Therapeutic Horticulture offerings, call (314) 577-9506, or visit the Garden's website www.mobot.org and click on "for seniors" under "Education."

Intergenerational horticulture therapy programs, such as Oaks and Acorns, are not only invigorating, but also fun.

The Expert Green Thumb

by Chip Tynan, Garden Answer Man

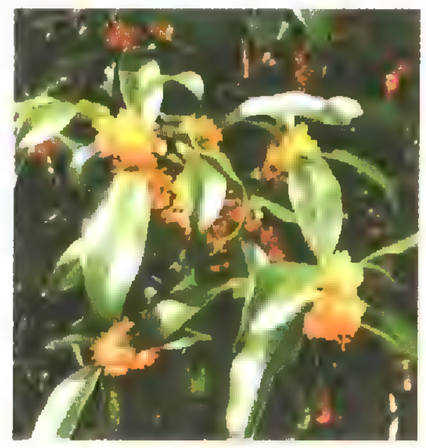
These five plants were selected for the competent gardener who enjoys a challenge. They all produce wonderful fragrance and are potential windowsill plants with the right touch. Care requirements are similar to citrus: they prefer to dry out some between waterings. Most can be found at greenhouse specialists such as Logee's (www.logees.com). In no particular order:

1. ***Jasminum sambac*** | Arabian Jasmine
   Great cultivars include 'Maid of Orleans' and 'Grand Duke of Tuscany.' Easy to find, easy to grow, blooms practically year-round, and smells great. It's a bushy, leaning climber, so the size is controllable on a windowsill.

2. ***Mitriostigma axillare*** | African Gardenia
   Not a gardenia at all, but a close relative. An excellent, low-care plant for a sweet, but not overpowering fragrance. Low, spreading habit. Self-branching, so no pruning, and slow-growing.

3. ***Murraya paniculata*** | Orange Jessamine
   Tropical evergreen with intermittent flowers and a very strong, pervasive fragrance. Can be pruned, and so has become popular in the nursery trade as a tall standard, convenient for indoor gardeners because it can be placed on the floor and still get light.

4. ***Osmanthus fragrans*** | Fragrant Olive
   Although a homely plant, while the others are more ornamental, the Fragrant Olive is to my nose the most sophisticated fragrance of any flowering plant, light, not overwhelming. Flowers are so small as to be almost insignificant. Typically they are creamy white in color, although there are a few new varieties in shades of yellow and orange. 'Orange Supreme' (*pictured*) features flowers that are not only orange, but also bigger than usual, and is well worth seeking out.



Osmanthus fragrans f. *aurantiacus* 'Orange Supreme'

5. ***Gardenia jasminoides*** | 'Shooting Star'
   A recent import to North America from the Beijing Botanical Garden, this gardenia is tantalizingly *near* frost-hardy, and a few have almost made it here in the Chinese Garden. As a windowsill plant, it differs from the standard gardenia. Instead of those big, blowsy cabbage-like flowers, Shooting Star features beautiful, clean 5-petal "stars," which are every bit as fragrant. A shy bloomer in youth, but definitely a plant to reward the patient gardener.

Peace lily

Plants—such as philodendron, spider plants, golden pothos, and peace lilies—help remove toxins from the air.

Breathe Easy

Three Simple Steps for Improved Indoor Air Quality

When you hear the words "air pollution," do you think about cars and coal, smog and spewing smokestacks? You might be surprised to learn that, according to the U.S. EPA, the air inside your own home is possibly just as mucky. Improved home energy efficiency combined with the use of chemical cleaners means we are exposed to more pollutants inside our less-leaky houses than we ever imagined. The good news is that with a little bit of attention, home indoor air pollution is mostly controllable. Improve your air space with these three handy hints for spring cleaning—and greening!

1 Toss that air freshener.

Volatile organic compounds (VOCs) are chemical emitted as gases, which are bad for your health. VOC concentrations are consistently higher indoors than out—up to ten times—and they are emitted by a variety of products, including cleaning supplies, pesticides, pressed-wood furniture, moth balls, dry cleaning, and yes, air fresheners. The solution? Clean green (below). Avoid particleboard. Store sweaters in moth-proof tubs. Air your dry cleaning before bringing it inside. Replace the air freshener with genuinely fresh air instead.

2 Out with the new, In with the old

Granny was right: you don't need all those new-fangled cleaners. Many commonly used household products contain toxic chemicals. Replace them with green options (below). Be sure to dispose of discarded cleaners safely, following the rules for disposal of Household Hazardous Waste.

Read more under "Detox Your Domicile" on the EarthWays Center website: www.earthwayscenter.org.

3 Clean air, clean lungs

Keep the air inside your home as clean as you can by practicing good home maintenance. Have gas appliances and central heating systems inspected yearly. Change furnace/AC filters regularly. Test your basement for radon gas with a do-it-yourself kit. Grow plants—such as philodendron, spider plants, golden pothos, and peace lilies—which help remove toxins from the air (their soil acts like a carbon filter). And when you feel that first hint of spring, open the windows, turn on the fan, and let the fresh air in!

Green Clean Solutions

For	Instead of	Use this
Windows	Ammonia-based cleaners (ammonia burns skin, damages lungs when inhaled, and is poisonous if ingested.)	⅓ cup white vinegar with 2+ cups water in a clean spray bottle. Wipe with rags for a reusable, noxious-chemical-free clean!
Scrubbing/whitening	Scrubbing cleaners with chlorine bleach, which irritates the lungs and eyes, and pollutes the waterways.	Sprinkle baking soda and scrub with a sturdy brush. Dip ½ cut lemon in baking soda for the final fizzy, lightening clean (and to cut grease).
Drains	Cleaners with sodium hydroxide, which burns skin and is irritating to eyes, nose, throat.	Boil a pot of water. Remove from heat and add 1 cup of baking soda, 1 cup of vinegar, and pour down the drain. Flush with tap water.
Laundry	Avoid products with phosphates; these water softeners contribute to algae bloom, killing fish populations. Avoid the sudsing agent sodium lauryl sulfate, which can enter the skin and cause dermatitis. Avoid fragrances, as they frequently contain phthalates, which are linked to cancer and asthma.	Green Clean old-fashioned laundry detergent: 1 oz. liquid castile (vegetable-based soap) ½ cup washing soda (water softener) ½ cup borax (for stains) ¼ cup baking soda (for colors) or white vinegar (for whites).
Laundry whitening	Chlorine bleach (see above).	½ cup hydrogen peroxide.

What to do in your garden now...

clip and save

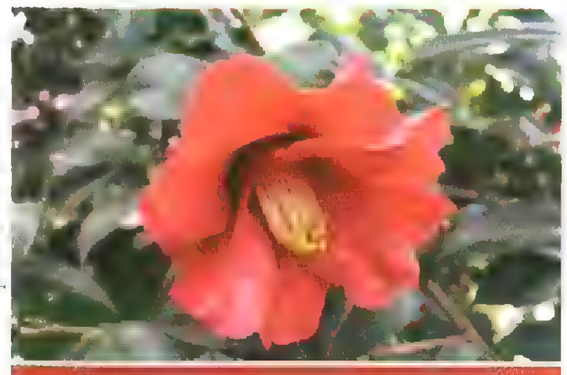


photo by Brian Mueller

January

all month

- ❑ Brush off heavy snow, but allow ice to melt naturally from plants. Prune damaged limbs promptly to prevent bark from tearing. Avoid salt or ice melters as these may injure plants; instead use sand, bird seed, sawdust, or vermiculite to gain traction on icy paths.
- ❑ Keep records of your garden. Inventory the plants and note past performance.
- ❑ Check fruit trees for evidence of rodent injury to bark. Use baits or traps where necessary.
- ❑ Avoid walking on frozen lawns as this may injure turf grasses.
- ❑ Some plants are sensitive to flouride and chlorine in tap water. Water containers should stand overnight to allow these gases to dissipate and warm to room temperature.
- ❑ Wash the dust off of houseplant leaves to allow the leaves to gather light more efficiently.
- ❑ Fluffy, white mealy bugs on houseplants are easily killed by touching them with a cotton swab of rubbing alcohol.
- ❑ Insecticidal soap sprays can be safely applied to most houseplants for the control of many insect pests.
- ❑ Scrub heavily encrusted clay pots with a steel wool pad after they have soaked overnight in a solution consisting of 1 gallon of water, and one cup each of white vinegar and bleach.

weeks 1–2

- ❑ Quarantine new plants to be sure they do not harbor any insect pests.
- ❑ If you didn't get your bulbs planted before the ground froze, plant them immediately in individual peat pots and place the pots in flats. Set them outside where it is cold and bury under thick blankets of leaves. Transplant them into the garden when weather permits.

week 3

- ❑ Set Amaryllis plants in a bright sunny window to allow the leaves to develop fully. Remove spent flowers. Keep the soil moist, not soggy. Fertilize occasionally with a general purpose houseplant formulation.

week 4

- ❑ Try sprouting a test sample of leftover seeds before ordering new seeds for spring. (Roll up 10 seeds in a damp paper towel. Keep moist and warm. Check for germination in a week. If fewer than half sprout, order fresh seed.)

photo by Brian Mueller

February

all month

- ❑ Don't work garden soils if they are wet. Squeeze a handful of soil to form a ball. If it is sticky, allow the soil to dry further.
- ❑ Start onion seed indoors now.
- ❑ Inspect fruit trees for tent caterpillar egg masses. Eggs appear as dark brown or grey collars that encircle small twigs. Destroy by pruning or scratching off with your thumbnail.
- ❑ Water evergreens if the soil is dry and unfrozen.
- ❑ Take geranium cuttings now.
- ❑ To avoid injury to lawns, keep foot traffic to a minimum when soils are wet or frozen.
- ❑ Repot any rootbound houseplants before vigorous growth occurs. Choose a new container that is only 1–2 in. larger in diameter.

week 1

- ❑ Branches of pussy willow, quince, crabapple, forsythia, pear, and flowering cherry may be forced indoors. Place cut stems in a vase of water and change the water every four days.

week 2

- ❑ Start seeds of slow-growing annuals like ageratum, verbena, petunias, geraniums, coleus, impatiens, and salvia indoors.
- ❑ Maple sugaring time is here! Freezing nights and mild days make the sap flow.
- ❑ Fertilize houseplants only if they show signs of new growth.

week 3

- ❑ Sow celery and celeriac seeds indoors now.
- ❑ Prune fruit trees. Peaches and nectarines should be pruned just before they bloom. When pruning diseased branches, sterilize tools with a germicide spray between cuts. Dry your tools and rub lightly with oil to prevent rusting.
- ❑ Sow seeds of larkspur, sweet peas, shirley poppies, and snapdragons outdoors. For best bloom, these plants must sprout and begin growth well before warm weather arrives.
- ❑ Apply appropriate sprays for the control of lawn weeds such as chickweed and dandelion.

week 4

- ❑ Sow seeds of broccoli, brussels sprouts, cauliflower, and cabbage indoors for transplanting into the garden this spring. If soil conditions allow, take a chance sowing peas, lettuce, spinach, and radish. If the weather obliges, you will be rewarded with extra early harvests.
- ❑ Fertilize established fruit trees once frost leaves the ground. Use about ½ lb. of 12-12-12 per tree, per year of age, up to a maximum of 10 lbs. per tree. Broadcast fertilizers over the root zone staying at least a foot from the tree trunk.
- ❑ Dormant sprays can be applied to ornamental trees and shrubs on a mild day while temperatures are above freezing.
- ❑ Start tuberous begonias indoors now. "Nonstop" varieties perform well in this climate.
- ❑ Encourage birds to nest in your yard by providing water and by putting up bird houses. Planting suitable shrubs, trees, vines, and evergreens will provide wild food sources and nesting habitat.

Featured Plant of Merit™

Snowberry / Coralberry
Symphoricarpos x *chenaultii* 'Hancock'

A low-growing deciduous shrub, snowberries grow only 1-1½ feet tall, but may spread over time to 10 feet wide with arching stems almost to the ground. Bell-shaped, pink flowers in summer give way to coral berries in fall/winter used in cut-flower arrangements. The Hancock cultivar is less susceptible to powdery mildew than other coralberries.

Plants of Merit™ is a program of the Missouri Botanical Garden. Plants are selected by regional horticulture experts for outstanding qualities and dependable performance in the lower Midwest. View all current PMs at www.plantsofmerit.org.

photo by Brian Mueller

March

all month

- ❑ Fertilize vegetables while preparing the soil for planting.
- ❑ Clean up beds by removing all weeds and dead foliage.
- ❑ Dormant mail-order plants should be unwrapped immediately. Keep the roots from drying out, store in a cool protected spot, and plant as soon as conditions allow.
- ❑ Trees, shrubs, and perennials may be planted as soon as they become available at local nurseries.
- ❑ Gradually remove mulch from strawberries as the weather warms.
- ❑ Repot rootbound houseplants to containers 2 inches larger in diameter than their current pot. Check for insect activity; control as needed. Prune leggy plants.
- ❑ Mow lawns low to remove old growth before new begins.

week 1

- ❑ Delay planting vegetables if the soil is too wet. When a ball of soil crumbles easily after being squeezed together in your hand, it is dry enough to be safely worked.
- ❑ Asparagus and rhubarb roots should be planted as soon as the ground can be worked.
- ❑ Seeds of hardy annuals such as larkspur, bachelor's buttons, and California poppies should be sown in the garden now.
- ❑ Complete heavy pruning of trees before growth occurs.
- ❑ Prune grapes. Tie vines to the trellis before the buds swell to prevent injury and crop loss.

week 2

- ❑ Plant peas, lettuce, radishes, kohlrabi, mustard greens, collards, turnips, potatoes, spinach, and onions (seeds and sets) outdoors.
- ❑ Summer and fall blooming perennials should be divided.

week 3

- ❑ Plant beets, carrots, parsley, and parsnip seeds outdoors. Set out broccoli, cabbage, brussels sprouts, chinese cabbage, and cauliflower transplants into the garden.
- ❑ Apply sulfur to the soils around acid-loving plants such as azaleas, rhododendrons, hollies, and dogwoods. Apply a balanced fertilizer to perennial beds when new growth appears.
- ❑ Plant spring bedding plants outdoors now.
- ❑ Cut ornamental grasses to the ground as new growth begins.
- ❑ Apply dormant oil sprays to your fruits now. Choose a dry, warm weather day.
- ❑ Apply broadleaf herbicides now for control of cool-season weeds. These must not be applied to areas that will be seeded soon.

week 4

- ❑ Start seeds of tomatoes, peppers, and eggplants indoors.
- ❑ Gradually start to pull back mulch from rose bushes.
- ❑ Prune peaches and nectarines just before they bloom.
- ❑ Mulch bramble fruits for weed control.
- ❑ Overseed thin spots and bare patches in the lawn.

For additional information on plant care and gardening:

- *visit the William T. Kemper Center for Home Gardening.*
- *call the Horticultural Answer Service, Monday through Friday, 9 a.m. to noon, at (314) 577-5143.*
- *check out the Gardening Help section at www.mobot.org.*

Member Plant Societies

These plant societies have joined the Garden as members as of December 31, 2007.

American Orchid Society | www.aos.org
Craig Plahn, (314) 965-5007, drscdplahn@mac.com

American Rock Garden Society
Jim Morris, (636) 256-3927, morrisje1@aol.com

Bonsai Society of Greater St. Louis | www.stlbonsai.org
Ted Piekutowski, Jr., (314) 831-8703, circustaz2@sbcglobal.net

Boxwood Society of the Midwest
Barbara O'Brien, (314) 965-8010, laughingeagle@msn.com

Gateway West Gesneriad Society
Gary Dunlap, (636) 789-3604, patspets@sbcglobal.net

Greater St. Louis Daffodil Society | www.stldaffodilclub.org
Beth Holbrooke, (314) 434-6152, bethholbrooke@aol.com

Greater St. Louis Dahlia Society | www.stldahliasociety.com
Colleen Simons, (636)583-8568, csimons@yhti.net

Greater St. Louis Daylily Society
Marc Zeller, (314) 487-7490, sosidesupply@swbell.net

Greater St. Louis Iris Society
Bob Pries, (636) 677-8805, rpries@sbcglobal.net

Henry Shaw Cactus Society | www.hscactus.org
Martin Schweig, (314) 361-4226, terrmart1@hotmail.com

Metropolitan St. Louis African Violet Council
Patricia Dunlap, (636) 789-3604, patspets@jcn1.com

Mid-America Regional Lily Society | www.marls.org
Fred Winterowd, (314) 423-5313

Missouri Botanical Garden Daylily Association
Chick Buehrig, (314) 389-8261, buehrig31@aol.com

Missouri Orchid Society
Ken Schaper, (636) 296-5661, aorchidnut@aol.com

Orchid Society of Greater St. Louis | www.osogsl.org
Ken Schaper, (636) 296-5661, aorchidnut@aol.com

Rose Society of Greater St. Louis | www.ars.org
Lisa McDonald, (636) 227-3426, mjmlcm001@sbcglobal.net

St. Louis Carnivorous Plant Society
Hat Addington, (314) 837-3772, sleepdreams@addlebrain.com

St. Louis Herb Society | www.stlouisherbsociety.com
Beverly Schmitt, (314) 962-8120, bschmitt7@aol.com

St. Louis Horticultural Society
James Seithel, (314) 781-3051, jseithel@aol.com

St. Louis Water Gardening Society | www.slwgs.org
Joan Woelfel, (636) 394-6342, joan.woelfel@sbcglobal.net

West County Daylily Society
Chick Buehrig, (314) 389-8261, buehrig31@aol.com

Making a Difference

Corporate Partner Close-up: Macy's

The Corporate Partners program is designed to strengthen the relationship between the Missouri Botanical Garden and the corporate community in the greater St. Louis metropolitan region.

In this issue we spotlight Macy's, a retail name in St. Louis since 2006 that has already made a big impact. Based in St. Louis, Macy's Midwest Division operates 113 stores in nine states, employing 17,600 people, with over $1.8 billion in sales in 2006. Building upon the former May Department Stores Company's deep roots in the St. Louis community, Macy's has rapidly become a valued corporate partner. Macy's has generously sponsored and participated in the Garden's fundraisers over the past two years, the Brewmaster's Gala, Vintner's Gala, and Wing Ding Gala. Macy's Foundation supports the Great Green Adventures programming in the Doris I. Schnuck Children's Garden and has also continued the May Company's crucial capital commitment for Tower Grove House restoration.

"The Garden is delighted to benefit from our partnership with Macy's," says Dr. Peter Raven, "and looks forward to joining together in the years to come."

Donor Profile: William B. Kountz, Jr.

As a retired architect, William "Bill" Kountz Jr. has done a lot of thinking about landscaping, but it wasn't just his love of redbuds and magnolias and bottlebrush buckeye that drew him to the Missouri Botanical Garden. It was family history. "I grew up in the neighborhood. My mother took classes at the Garden, and then she taught me how to garden. I remember as a kid when it was a gray, dark day in February, we'd go to the Linnean House and see all those beautiful camellias in bloom." Bill has supported the Garden through his membership and gifts since 1981. As a member of the Heritage Society, Bill will endow the William B. Kountz, Jr. Endowed Scholarship in Botanical Studies.

Endowed positions enable the Garden to commit to long-term projects with the knowledge that the positions required to carry out its mission are permanently supported. If you'd like to find out more about how you can support the Garden, please call (314) 577-9532.

Corporate Partners

The Corporate Partners program is designed to strengthen the relationship between the Garden and the corporate community in the greater St. Louis metropolitan region. | List reflects membership through Dec. 1, 2007.

Principals
$25,000 and up
Commerce Bank
Emerson
Monsanto Company
Schnuck Markets, Inc.

Shareholders
$10,000 – $24,999
Anheuser-Busch Companies, Inc.
The Boeing Company
Bryan Cave LLP
Bunge North America
CBIZ Accounting, Tax & Advisory/Mayer Hoffman McCann P.C.
Enterprise Rent-A-Car Company
Macy's
Sigma-Aldrich Corporation

Underwriters
$5,000 – $9,999
A.G. Edwards
Brown Shoe Company, Inc.
BSI Constructors Inc.
Edward Jones
McBride & Son Companies
R. Duane Reed Gallery
U.S. Bank, N.A.

Investors
$2,500 – $4,999
Alberici Group
Argent Capital Management
Chase Park Plaza
Christner Inc.
DHR International, Inc.
Eureka Forge
Forms Distribution Corporation
HOK
KPMG LLP
MTR Landscape Architects, LLC
Regions Bank
Vantage Credit Union

Supporters
$1,200 – $2,499
Alpha Packaging
Anthem Blue Cross and Blue Shield of Missouri
Arrow Box Company
Belden
Catering St. Louis, Inc.
Chemia Corporation
CIC Group, Inc.
Colliers Turley Martin Tucker
Covidien
CSI Leasing, Inc.
The Daniel and Henry Company
Dierbergs Markets, Inc.
Dodge & Cox Investment Managers
Ernst & Young
Fabick Companies
General Motors Corporation
The Graybar Foundation
Guarantee Electrical Company
Hager Companies
Holland Construction Services
Hortica
Kwame Building Group, Inc.
Laclede Gas Company
Lewis and Clark Community College
Mackey Mitchell Associates
McCarthy Building Companies, Inc.
National City
Northern Trust Bank
The City of O'Fallon, Illinois
Plaza Motor Company
Sachs Properties
Smurfit Stone Container Corp.
SSI
Stone Carlie & Company
J.W. Terrill
Thompson Coburn LLP
Tucker Consultants
UMB Bank, N.A.
Willaredt Acres, Inc.

This Summer, Be SAGE!

Is your high-schooler looking for a way to fulfill their service requirement? The Garden's Students as Garden Educators (SAGE) service program offers teenagers the opportunity to teach youngsters about plants. To learn more, visit www.mobot.org/education/sageservice.

High school volunteers instruct younger children about the wonders of the plant world as part of the SAGE service program.

KIDSTUFF

Sweet potatoes are extremely high in vitamin A. Christopher Columbus liked sweet potatoes so much, he took them back to Europe.

I YAM WHAT I YAM

George Washington Carver was a scientist who tried to help poor farmers in the American South. He knew that peanuts and sweet potatoes could grow well, even in weak soil. He set out to find uses for these crops, so that their value would help the farmers. He discovered over 100 new products from sweet potatoes alone. Flour, ink, starch, synthetic rubber, tapioca, vinegar, a type of glue for postage stamps, and 500 shades of dye for cloth were all made from sweet potatoes!

Whoa! Did You Know?

A sweet potato is not a potato. It is a root from the Morning Glory family. Potatoes are "tubers," a kind of underground stem, from the Night Shade family.

Even though they are often labeled "yams," a sweet potato is not a true yam. Yams are from a different plant family and come from Africa.

Sweet potatoes are one of the oldest foods. In Peru, sweet potatoes date back to 750 B.C.

GROW A SWEET POTATO

You'll need:

- a sweet potato
- toothpicks
- jar or glass
- bottled water (non-chlorinated)

1. Wash the sweet potato thoroughly.
2. Insert toothpicks into the sides of the sweet potato about ⅓ of the way down.
3. Place the sweet potato into the jar and fill with enough water to keep the bottom ⅔ of the sweet potato wet.
4. Place in a warm, sunny window.

In a few days, the sweet potato will begin to put down roots. Add water as needed, and in a few weeks, it will sprout leaves from the top. In the next months, vines will grow too.

WORD SEARCH

L	Q	S	F	T	R	P	T	T	P	N	P	C	Q
M	U	E	Z	B	G	E	U	I	Z	T	R	R	M
O	T	A	T	O	P	A	O	S	Y	A	N	H	X
T	T	E	E	W	S	N	R	J	O	P	W	H	T
C	A	R	V	E	R	U	P	M	H	I	M	C	Z
U	R	E	P	T	I	T	S	D	Q	O	A	J	N
X	H	V	I	N	E	S	A	W	M	C	Y	F	D
X	O	N	N	M	Z	A	K	S	H	A	I	Z	L

Tapioca
Carver
Yam
Peru
Peanuts
Potato
Sprout
Vine
Sweet

"Will the next generation produce enough plant educators, botanists, plant scientists, and environmental scientists to sustain our society?"

Research shows that children who experience nature with an adult mentor or family member grow into engaged, caring citizens with a healthy respect for the environment.

Babes in the Woods

Plant-based learning nurtures children—and empowers them!

by Deborah Chollet Frank, Vice President, Education and Interpretation

When Garden instructor Laura Aschenbeck announced that she was serving plants for a snack, students in her Garden Kids class (ages 6–8) looked panicked. What kind of yucky stuff would this be? When a sampling of yummy fruits and veggies was served, the children learned a valuable lesson: we eat plants!

In fact, without plants, life as we know it would not exist. Through the extraordinary process of photosynthesis, Earth's abundant flow of energy from the Sun is converted into the foundational needs of human existence—oxygen, food, medicine, shelter, and fuel. Plants give us what we need to create such essentials as paper, cloth, and building materials. We are literally surrounded and supported by plant-based products in all areas of our lives.

To ensure our future health as a species, human beings must cultivate an appreciation of our dependence on plant life. Experiences that

engage young children—observing, touching, smelling, and sometimes tasting plants—are vital. When children understand how plants survive, and how they help us survive, they intuitively grasp why we need to maintain a healthy environment for plants and people alike to thrive.

Educational research documents the benefits to children of gardening education. A study in early 2007 confirmed the effect of garden and greenhouse experiences on the visual-spatial skills of preschoolers and kindergarteners. The Dimensions Educational Research Foundation found that in a garden, children observe patterns, shapes, colors, and textures. They begin to comprehend relationships, viewing things from various perspectives, as well as understanding concepts such as area and volume.

Partners for Plant-Based Education, a coalition of national organizations devoted to promoting the use of plants as an important element of children's educational programs, has documented a strong connection between plant-based education and a child's positive self-esteem, improved social development, creative thinking and problem solving, and effective learning of interdisciplinary topics such as science, math, language, and art.

Plant education also benefits society. A well-publicized social concern is "nature deficit disorder." Coined by journalist Richard Louv in his book *Last Child in the Woods*, nature deficit disorder is a byproduct of the increasing amounts of time our children spend indoors and reduced opportunities to play in and experience the natural world. Children who do not interact with nature regularly can experience diminished use of the senses, attention difficulties, and higher rates of physical and emotional disorders. They also care less about our environment.

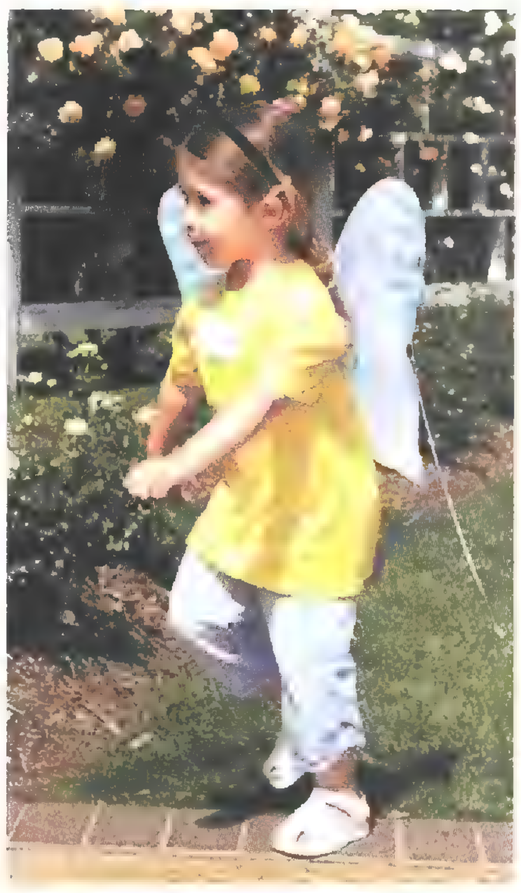
Why does it matter? As Dr. Christine Flanagan, director of public education at the U.S. Botanic Garden, puts the concern succinctly, "Will the next generation produce enough plant educators, botanists, plant scientists, and environmental scientists to sustain our society?"

The Missouri Botanical Garden and other public gardens across the country are rallying their resources to respond to this concern with programming that fosters meaningful connections for children to nature. If children have experiences with plants during their early, formative years, not only will this learning create positive feelings about themselves, but it will yield healthy attitudes about our environment as well.

Did you thank a plant today? ■

Sprouts, Buds, and Kids

Learning starts with what we have in common with plants: people need clean air and nutrients; so do plants. Next, we explore what plants provide to us: people need plants for food and oxygen. Planting a seed, nurturing it with water and sunshine, and then observing germination and growth gives each child the privileged experience of participating in life in its most basic terms. Even small children can develop a sense of responsibility and ownership as they care for their plant.



Early childhood education programs at the Garden, such as Little Sprouts (ages 2 and 3), Garden Buds (ages 4 and 5), and Garden Kids (ages 6–8) provide an exciting and engaging way for children to learn about plants from a very early age. Hands-on learning, also known as nice-and-messy learning, cultivates meaningful connections, and as children grow, so do the opportunities for gardening activities, such as an edible garden. Preparing nutrient-rich soil, planting seeds, caring for the plants, and then reaping the harvest, this cycle helps young gardeners develop a love for the natural world, introduces them to healthful foods, and gives them a true sense of accomplishment.

Garden members always receive a discount! For more information or to request a catalog, call (314) 577-9506 during weekday business hours or visit www.mobot.org/education.

How are your kids going to spend their summer?

Discover the power of plants with Healthy Plants, Healthy Kids day camp at the Garden. Explore the wonders of insects and flowers at the Butterfly House. Create your own fantasy "green home" at Camp EarthWays. Enjoy an [illegible] adventure at the Shaw Nature Reserve. Summer program listings are available February 1 at www.mobot.org/education. Garden members enjoy discounts and early registration privileges. Call (314) 577-9506 for more information or to request a summer programs guide.

Fun Things to Do with Kids at SNR...

- ☑ Hike to the "tree house" bird observation blind in the wetland.
- ☑ Skip rocks from the gravel bar on the Meramec River.
- ☑ Visit the overlook at the prairie and draw what you see.

At the new Nature Explore Classroom™ at the Shaw Nature Reserve, kids are encouraged to play in the great outdoors.

Go Outside and Play!

by Lydia Toth, Senior Manager, Education

If I asked you what some of your fondest childhood memories are, chances are many of you would reminisce about the times spent catching crawdads in the creek or playing in the neighborhood tree house. Opportunities for unstructured play are more limited today (see page 18).

Last May, the Missouri Botanical Garden became the first botanical garden in the country to establish a Nature Explore Classroom™. This March, the Shaw Nature Reserve will add a Nature Explore Classroom as well. Nature Explore Classrooms were conceived by the National Arbor Day Foundation and Dimensions Educational Research Foundation as a direct response to "nature deficit disorder," defined as a growing lack of engagement and interaction between children and nature.

Upon completion of the Reserve's Nature Explore Classroom this spring, this 3-acre site located near the Pinetum Lake will provide multiple opportunities for children to use natural materials in creative, unstructured play. Kids will be able to

- create sculptures using sticks, logs, and stones,
- dance on a stage to the sounds of instruments made from natural items,
- hone their balancing skills as they jump from log to log.

Children have fun while the spaces and activities enhance concentration and creativity, relieve stress, and develop imagination and a sense of wonder—all of which are motivating factors for lifelong learning.

In research conducted by Louise Chawla, the life experience that had the greatest influence in developing adult conservationists was the experience of frequent play in nature as a child. The second most important was having an adult mentor–usually a family member—who shared their love of the outdoors. Why not take a child in your life to the Nature Reserve this spring?

SHAW NATURE RESERVE

Hwy. 100 & 44 (exit 253), Gray Summit, MO 63039
phone: (636) 451-3512 • www.shawnature.org

Grand Opening

Saturday, March 29,
9:30 a.m. to 2 p.m.

Join us as we "cut the ribbon" on the Reserve's exciting new Nature Explore Classroom™. After playing with the natural materials, visitors are invited to participate in "Tale Travelers," a station by station exploration of all the Reserve has to offer. Pack a lunch and explore by map with stories and hands on activities along the way.

Butterfly House

15193 Olive Blvd., Chesterfield, MO 63017
(636) 530-0076 • www.butterflyhouse.org

A young visitor gets upclose and personal with a friendly giant African millepede. Research shows that children who interact with nature care about nature.

Hey, Can I Bug You?

The Butterfly House features over one thousand tropical butterflies in free flight inside the conservatory. But, did you know the Butterfly House also exhibits arthropods from ecosystems around the world? Here's an up-close look at three of our current creepy, crawly friends:

Cetonine beetle | *Dicronorhina derbyana*
Found in the mountains of Cameroon and other equatorial African countries, Cetonine beetles are among the most colorful of insects. Males have small horns; females do not.

Atlas beetle | *Chalcosoma atlas*
One of the largest insects in the world, some individuals reach a quarter pound. Atlas beetles are found in southeast Asia. Grubs can take up to 16 months to develop, but adults live only 3–4 months. They owe their fierce appearance to their horns, which are used for defending territory and winning females.

Giant African Millipedes | *Archispirostreptus gigas*
The largest millipede on Earth can reach 12 inches in length. Despite its giant size, it is a mild-mannered and harmless vegetarian. Some giant African millipedes at the Butterfly House have lived up to six years!

photo by Mark Deering

Featured Friend

Tanzanian sunset moth
Chrysiridia croesus

Range: Tanzania and Madagascar
Host plants: *Omphalea* of the Euphorbia family

"Incredible" is the only way to describe this moth's rainbow of color. And yet this colorful beauty is actually *aposematism*, an advertisement of distastefulness in the animal kingdom. The plants the caterpillars feed on contain large amounts of distasteful alkaloids, and these chemicals are stored by the moth for its own defense.

Events and Classes at the Butterfly House

Hot, Hot, Hot!
Sat. and Sun., Jan. 26–27, 11 a.m. to 2 p.m.
Shake off the winter chill and join in tropical family fun at the fifth annual Hot, Hot, Hot! Families with children ages two to eight can take part in games, activities, crafts, and live music. All activities will be different each day and are included with regular admission. Garden members can use their Bonus Bloom passes to attend.

Camp Bugaloo
Science, math, and language development activities are the focus of these 90-minute nature-themed programs for pre-schoolers, ages 2–4, with a parent or guardian. $16 ($14 for Garden members). Pre-registration required; call (636) 530-0076, ext. 13.

Nature's Alphabet: Insects to Plants
Fri., Jan. 11 or 18, 10:30 a.m.; Sun., Jan. 13, 12:30 p.m.

Nature's Alphabet: Roaches to Zebras
Fri., Feb. 8 or 15, 10:30 a.m.; Sun., Feb. 10, 12:30 p.m.

EARTHWAYS CENTER

3617 Grandel Square, St. Louis, MO 63108
phone (314) 577-0220 • www.earthwayscenter.org

Sustainability:
meeting the needs of the current generation without compromising the ability of future generations to meet their own needs.

Don't know much about your carbon-print? EarthWays Center staff are here to help. From left: Joyce Gorrell, Julia Feder, Jean Ponzi, Glenda Abney, Emily Andrews, Katy Mike Smaistrla, and Gary Mackey.

Events and Classes at the EarthWays Center

Take the Tour
Jan. 19–20; Feb. 16–17; March 15–16
The easiest way to learn about low-cost, sustainable living options is to take a tour of the EarthWays Center, a Victorian home restored as a model of energy and resource efficiency. Staff can help you identify the best options for your own home, from repainting a room to rehabbing to building new. Best of all, Garden members and their guests are always admitted free! Tours are offered the third weekend of every month and begin at 11 a.m., noon, 1, and 2 p.m.

Sustainability 101
Thurs., March 13, 6:30 to 9 p.m.
How can we ensure that our actions and decisions have a simultaneous, positive impact on the environment and the people living in our communities, and make economic sense? Join the ongoing discussion! Quarterly topics include green investments, carbon offsets, sustainable transportation in St. Louis, "greening" your business, and more. The March topic will be "What is a Carbon Footprint?" $10 ($5 for Garden members). Reserve your place by calling (314) 577-0220.

Green Learning is Growing

by Julia Feder, Supervisor, Education Programs

Do we live on a "Planet in Peril?" How do we make sense of our individual roles in a local or global discussion about sustainability? Every day, it seems, we hear about "sustainability" through conversations with friends, television specials, or the evening news. But what does it mean?

More than 20 years ago, the United Nations called for sustainability to be considered in a global context. They offered this definition: "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs."

Today, the Garden's EarthWays Center puts this sensible definition to work, with educational outreach and on-site displays to encourage visitors to consider the environmental impact, social implications, and economic effects of the decisions they make. EarthWays Center staff work with

- the general public through tours and classes on how to make homes more efficient and comfortable.
- schools throughout the region, to integrate sustainability topics into curriculum at all grade levels.
- the US Green Building Council's St. Louis Chapter to promote green building of schools, homes, and businesses.

Interested in delving farther into these topics? Take a tour or attend one of our adult classes, such as Sustainability 101. Subscribe to the EarthWays Center quarterly e-newsletter for updates about adult programs, as well as notices from related organizations. For more information and to sign up, visit www.earthwayscenter.org.

Tributes *September/October 2007*

A tribute gift to the Garden is a wonderful way to honor family and friends. Tributes of $25 and up are listed in the *Bulletin*. If you have questions regarding giving opportunities at the Garden, please call (314) 577-5118. You can also make a tribute gift online at our website, www.mobot.org.

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Sophia M. Sachs
Butterfly House Tributes & Pavers

To learn more about these opportunities, call (314) 577-0291 or www.butterflyhouse.org.

Tributes and Pavers dedicated at the Sophia M. Sachs Butterfly House in September/October 2007

Tributes

In Memory of

Griffin Douglas George Heiney
Ms. Michele Miller

Mrs. Edna Drackert
Mrs. Rachel S. Anderson
Sophia M. Sachs Butterfly House Gift Shop Staff and Volunteers

Mr. Hubert A. Heimos
Mrs. Hubert A. Heimos

In Honor of

Evelyn Newman
Jan Simons
Jules and Shirley Snitzer

Sophia M. Sachs Butterfly House
Mr. and Mrs. Don K. Helling

Pavers

Pauletta Bilkey
Paul and Judy Taxman

Nancy Hammond
Dr. Brent Newman

Mim Krebeck
Mr. Craig Krebeck

Lisa A. McDaniels
Sharon Schodroski

Dr. Donald M. and Sallie Day Mogerman
Dr. Jaime M. Dodd

Dr. Andrew J. and Lily R. Signorelli
Dr. Jaime M. Dodd

Mahika Vanukuru
Vijaya and Bala Vanukuru

Members' Entry Court

Engraved clay bricks and signature bronze bricks are a wonderful way to commemorate any special occasion, as well as final memorials. For additional information regarding the Garden's brick program, please contact the Institutional Advancement Office at (314) 577-0874 or visit www.mobot.org.

Bricks from September through October 2007.

Bronze Signature Bricks

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Mr. and Mrs. Melvin C. Bahle

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Dr. Caryn G. Hasselbring

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Mr. and Mrs. David Schneider

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Mr. Frank F. Kling

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Mr. and Mrs. Craig E. LaBarge

Louis B. Rubin
Mr. and Mrs. Louis B. Rubin

Pauline Scarborough
Mr. Frank Scarborough

Margie Greenlee Smith
Ms. Rosie L. James

Kathy and Don Zundel
Mr. and Mrs. Donald J. Zundel

Engraved Clay Bricks

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Mr. and Mrs. Robert H. Mertzluffi, Jr.

Joseph E. Hiles
Mrs. Marabeth Banks
Ms. Sue Garner

Lucinda V. B. McCall
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In Honor Of William Tao
Missouri Botanical Garden

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Events...

Storybook Classics
ORCHID SHOW 2008

photo by [illegible]

See over 800 varieties of orchids in a lush tropical setting at the Garden's annual Orchid Show

Return this year to childhood wonder of magical plants with "Storybook Classics." The theme of the 2008 orchid show was inspired by plant-related children's classics like Jack and the Beanstalk, Johnny Appleseed, Peter Rabbit, and The Secret Garden. Experiencing the color, beauty, and fragrance of over 800 blooming orchids in the middle of winter is indeed a magical experience. Listen to intriguing stories about orchid lore and history, and learn how to care for your own plants, with the free audio-commentary. Visit the Garden's website for more information: www.mobot.org.

Hours: February 2 through March 16, 9 a.m. to 5 p.m.

Admission: $3 in addition to Garden admission. Members are admitted free.

Members' Evening | *Friday, February 1, 5 to 8 p.m.*
Don't miss this magical, members-only evening viewing of the orchid show with musical entertainment, cash bar, and dinner buffet ($17.95 per person). No reservations necessary.

CARVER DAYS
FEBRUARY 16 THROUGH 18

In honor of Black History Month, the Garden offers a three-day weekend of family fun with a focus on George Washington Carver, one of America's great scientists. Activities include: the one-person play "Listening to the Still Small Voice: The Story of George Washington Carver"; the "Jessup Wagon," Carver's movable school where kids are invited to explore, experiment, and invent in Carver's footsteps; the Carver Garden with its beautiful statue (tram rides to the Carver Garden are included with general admission and run from 10 a.m. to 4 p.m.); and Carver-inspired sweet potato and peanut recipes in Sassafras.

Hours: Saturday–Monday, February 16–18, 9 a.m. to 4 p.m.
Admission: Free with regular Garden admission

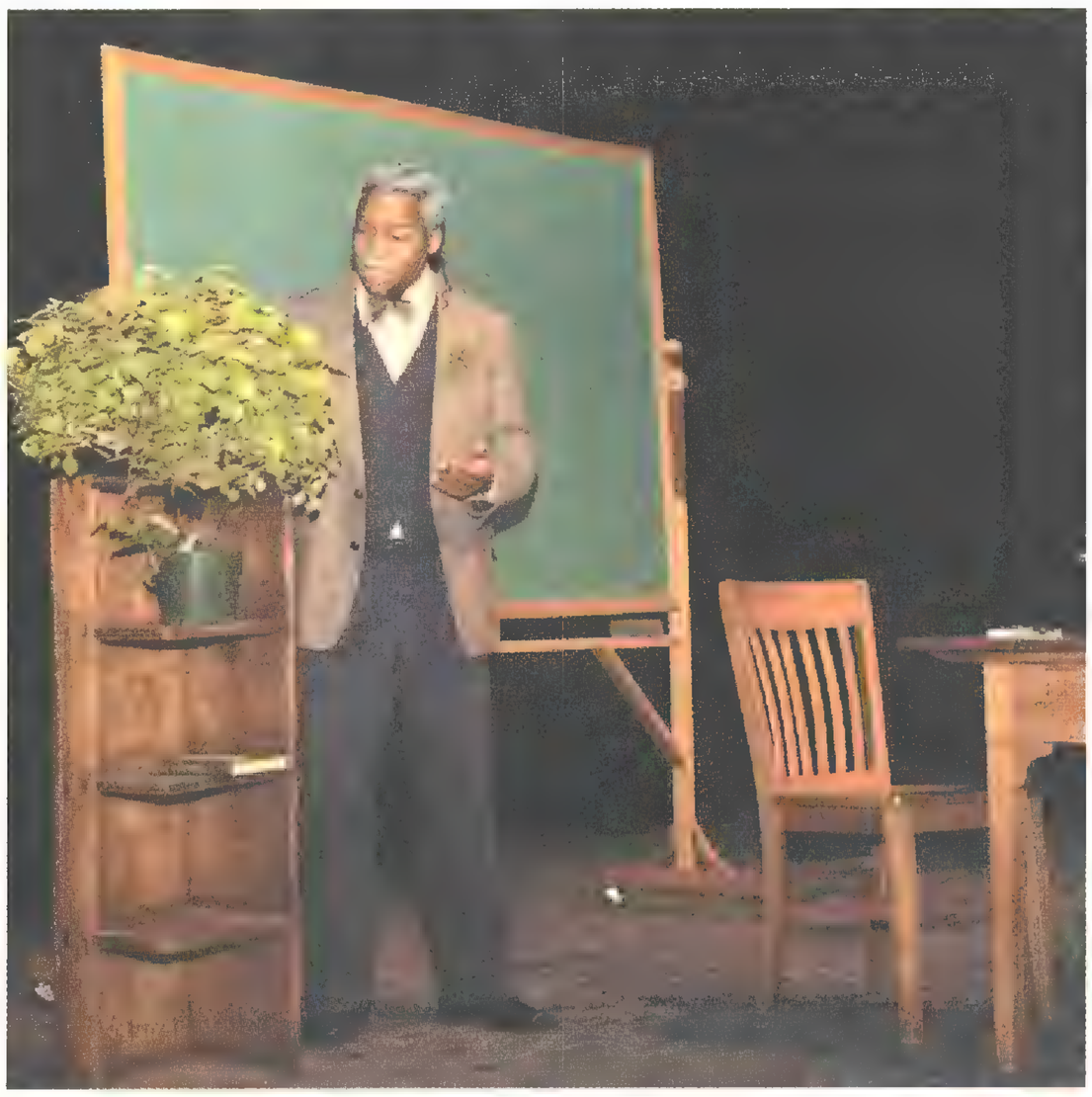
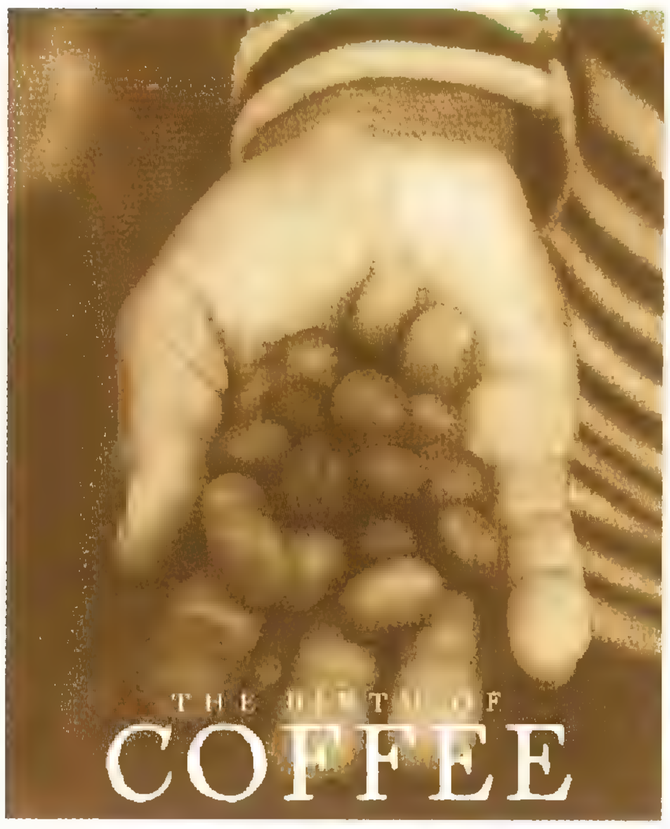


photo by Cindy Lancaster

Paxton Williams performs at Carver Days Sunday and Monday at 11 a.m., 1 and 3 p.m.

more events...



The Birth of Coffee
Fri., Jan. 11–Sun., Mar. 16
Don't miss this exhibit of 40 coffee-tinted, fine-art photographs of the people, places, and processes involved in bringing coffee to the table—*The Birth of Coffee*—sponsored in St. Louis by Ronnoco Coffee. The husband-and-wife team of photojournalist Daniel Lorenzetti and author Linda Rice Lorenzetti spent five years traveling a quarter-million miles to eight countries on five continents, to document the world's coffee cultures. They followed the coffee cycle from a single seed at planting, to harvest, processing, shipping, and ultimately the final brewed cup.

Related events:
- Daniel and Linda Lorenzetti sign copies of the book Sat., Feb. 2 from 1 to 3 p.m.
- Ronnoco's master green coffee buyer, Robert Carpenter, demonstrates coffee "cupping" technique, Sat., Feb. 2, from 2 to 4 p.m.
- Throughout the exhibition, Ronnoco Coffee will display an antique roaster, bags of coffee beans, and vintage posters in the lobby.

Members' Day: Butterfly Gardening
Sat., Jan. 12, 11 a.m., Butterfly House
Plan for spring beauty. Learn how to attract butterflies to your backyard with host plants and nectar sources. Stay for a guided tour of the butterfly conservatory.

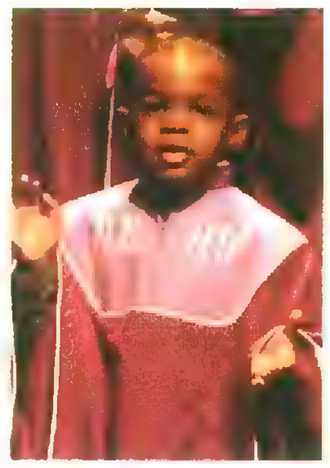
Members' Day: STL Celebs with Charlie Brennan
Wed., Jan. 23, noon, Shoenberg Theater
What do Tom Cruise and Maya Angelou have in common? They both once lived in St. Louis! Join KMOX radio host Charlie Brennan to discuss his new book *A Guide to Illustrious St. Louis*. Book signing follows.

New Member Orientation & Tour
Sat., Feb. 2, noon, Shoenberg Theater
Learn about events, discounts, classes, and all the benefits of membership. Participants receive Bonus Bloom passes and discounts in Sassafras and the Garden Gate Shop. Bring your friends who are interested in membership too!

Backyard Bird Festival
Sat., Feb. 2, 7:30 a.m. to 2 p.m., grounds
Bird walks, adult classes, hands-on programs for kids, live birds, and bird-related exhibits. $15 adults, $10 children ages three to 12. Call (314) 577-9506, or download a registration form on www.mobot.org/education.

Members' Day: Green Homes
Sat., Feb. 9, 10 a.m., Shoenberg Theater
From landscaping to light bulbs, explore everyday ways you can save money while saving the planet. Program Manager Jean Ponzi presents environmental issues that just make cents.

Valentine's Day Dinner Dance
Sat., Feb. 9, 6:30 to 10 p.m., Ridgway Center
Our most romantic event: stroll through the orchid show, enjoy a gourmet dinner, and dance the night away with your special someone. Dinner is served 6:30 to 7:30 p.m. Dancing till 10 p.m. $60 per person (cash bar). Reservations are required and seating is limited, so call (314) 577-9570 or visit www.mobot.org/membership.



Celebrate the Gospel
Sun., Feb. 10, 3 p.m Shoenberg Theater
Celebrate Black History Month with a heartfelt expression of African-American culture—gospel singing. The 19th annual "Celebrate the Gospel" features Mardra Thomas and the Glad Tidings Quintet in a tribute to Mahalia Jackson and other great gospel singers of hte 20th century. Seating is first come, first served.

Science Café: Climate Change in Tibet
Thurs., Feb. 21, 6:30 p.m., Shoenberg Theater
The Garden's Dr. Jan Salick presents. $20 ($15 for Garden or Science Center members; $10 students). Reservations required, so call (314) 289-4424. Stimulating conversation in an informal setting presented by the Garden and the Science Center.

Sugared, Spiced, and Everything Iced
Sat.–Sun., Feb. 23–24, 10 a.m. to 4 p.m., Ridgway Center
Local experts display exquisitely decorated cakes and cookies. Learn about techniques, wedding cake trends, or get ideas and tips for your own creations.

Gardening Blitz Weekend
Sat.–Sun., Feb. 23–24, Kemper Center for Home Gardening
A full weekend of expert gardening advice and resources to get you started for spring. You pick the program: select from 19 of our most popular full-length gardening classes, from low-maintenance perennials and native plants to orchids and roses and beyond. Fees from $15 to $48; Garden member receive a discount. Registration required, so call (314) 577-9441 to request a spring course brochure or visit www.gardeninghelp.org and click on "Classes."

Young Friends: Coffee Cupping
Wed., Feb. 27, 6 to 8 p.m., Ridgway Center
Young Friends are invited to learn how coffee professionals evaluate aroma and flavor of coffee during a "cupping" sponsored by Ronnoco Coffee.

Members' Day: Flowers for Kids
Sat., Mar. 8, 11 a.m., Jordan Education Wing
Bring your children and grandchildren for some hands-on flowery fun. Kids learn how to care for flowers, make flower food from basic ingredients, and arrange their own bouquet.

photo by Erin Whirson

Eggstravaganza

Eggstravaganza
Sat., Mar. 22, 10 a.m. to 12:30 p.m., Climatron lawn
Hop on over to the Garden for our annual Eggstravaganza egg hunt! Meet the "Bunny" while the little ones (ages 2–10) hunt for eggs. Egg hunts begin promptly at 10:30, 11, 11:30, and noon, so please be sure to allow enough time to walk to the Climatron lawn. Space is limited, so call (314)577-9570 or visit www.mobot.org/membership.

Horticultural Therapy Awareness Day
Sat., Mar. 22, 11 a.m. to 3 p.m., Ridgway Center
Plants and gardening provide many physical and mental benefits by reducing stress, gently exercising aging joints, and stimulating memories. Activities for all ages.

Members' Day: Garden Photography at Night
Fri., Mar. 28, 11 a.m. to 1 p.m., Shoenberg Theater
"As darkness descends, the Garden becomes a different and mysterious sort of place." Montreal-based photographer Linda Rutenberg presents images from her new book, *The Garden at Night*. Book signing follows.

Save the Date: Garden Tour 2008
Sun., June 8
Mark your calendar now for Garden Tour 2008, the eagerly anticipated tour of the most spectacular private gardens in the area, hosted by the Missouri Botanical Garden only once every three years.

= fun for families
= members' event

2008 Members' Days & Events

Every month Garden members enjoy special events, tours, and lectures by local experts. Plan to join us in 2008!

Sat., Jan. 12	Butterfly Gardening (BH)
Wed., Jan. 23	STL Celebs with Charlie Brennan
Fri.. Feb. 1	Orchid Preview
Sat., Feb. 2	New Member Orientation
Sat., Feb. 9	Green Homes with Jean Ponzi
Sat., Feb. 9	Valentine's Day Dinner Dance
Sat., Mar. 8	Flowers for Kids
Sat., Mar. 22	Eggstravaganza
Fri., Mar. 28	Garden Photography at Night with Linda Rutenberg
Tues., Apr. 8	Behind the Scenes: Research
Wed., Apr. 23	Birding (SNR)
Sun., Apr. 27	*Niki* opens
Sat., May 3	New Member Orientation
Wed., May 28	Rose Evening
Sun., June 8	Garden Tour
Fri., June 20	Members' Musical Evening
Sun., June 22	A Midsummer Night's Dance
Fri., July 11	Members' Family Picnic
Fri., July 18	Ivey Selkirk Antique Roadshow
Wed., July 23	Members' Day - Butterfly House
Sat., Aug. 2	New Member Orientation
Fri., Aug. 22	Ottoman Garden Tour
Sun., Sept. 14	Grandparents Day
Fri., Sept. 19	Behind the Scenes: Greenhouse Tour
Sat., Oct. 4	Best of Missouri Market
Sun., Oct. 5	Best of Missouri Market
Thurs., Oct. 16	Garden Photography with Ian Adams
Sat., Oct. 18	Fall Color Walk (SNR)
Sun., Oct. 26	Ghouls in the Garden
Sat., Nov. 1	New Member Orientation
Fri.. Nov. 7	Holiday Decorating
Tues., Dec. 2	Flower & Train Show Preview
Sat., Dec. 6	Breakfast with Santa
Sat., Dec. 13	Holiday Concert

= fun for families.

On Members' Days and Events, members enjoy discounts of 10 percent in Sassafras and the Terrace Café, and 20 percent in the Garden Gate Shop and Little Shop Around the Corner.

Lunch Hour Vacation

- ☑ Dry skin?
- ☑ Frazzled hair?
- ☑ Winter blahs?

If you're not on the next plane bound for Borneo, there are few activities more enjoyable in cold-season St. Louis than visiting the Climatron® conservatory tropical rain forest. At a time of year when the average outdoor temperature hovers around 29 degrees, the daytime temperature inside the Climatron is a constant 85°—and delightfully humid. Walk beneath a waterfall, inhale the heady scent of flowering orchids and fruiting guava, and refresh your winter-weary body and spirit.

Missouri Botanical Garden

[illegible] Blvd., St. Louis, MO 63110
[illegible] 59400 • www.[illegible]

Key *(All events take place at the Garden unless otherwise noted.)*

Garden-specific locations

CA = Cohen amphitheater
CL = Climatron lawn
GGS = Garden Gate Shop in RC
JE = Jordan Education Wing in RC
KC = Kemper Center for Home Gardening
SP = Spink Pavilion
RC = Ridgway Center
SS = Sassafras, the Garden's café in RC
ST = Shoenberg Theater in RC

Off-site locations:

BH = Butterfly House, (636) 530-0076
EWC = EarthWays Center, (314) 577-0220
LS = Little Shop Around the Corner, (314) 577-0891
SNR = Shaw Nature Reserve, (636) 451-3512

★ Members-only event
☎ Reservations required
$ Fee

[illegible] & Tours

- Guided walking tours depart ticket counter daily at 1 p.m.
- Early morning walking hours: Wed. and Sat., from 7 a.m.
- Calendar events are covered in more detail on pages 25–27. Off-site events, pages 20–22.
- During members' days and events, members enjoy discounts of 10 percent in Sassafras and the Terrace Café, and 20 percent in the Garden Gate Shop and Little Shop Around the Corner.

[illegible]

- Tower Grove House is closed January and February each year.
- Little Shop Around the Corner is closed in January, but accepts donations Tues.–Fri., 10 a.m. to 4 p.m.
- The Garden Gate Shop closes January 14–18 for cleaning and inventory.
- Trams cease operation until April.
- Children's Garden and Terrace Café inside the Kemper Center for Home Gardening are closed until April.
- Starting late January, register for spring classes and tours, early childhood, and fitness programs at the Missouri Botanical Garden for adults and families.

January 2008

average temperature: 29.55
average monthly precipitation: 2.14 in.

What's in bloom?

camellias

snowdrops

berries

fragrant olive

ozark witchhazel

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01 New Year's Day	02	03	04	05
06	07	08	09	10 Islamic New Year	11 • *Birth of Coffee* exhibition opens. RC • Camp Bugaloo, $☎ BH	12 ★ Members' Day: Butterfly Gardening. BH
13 • Camp Bugaloo, $☎ BH	14 • GGS closed for maintenance	15 • GGS closed for maintenance	16 • GGS closed for maintenance	17 • GGS closed for maintenance	18 • GGS closed for maintenance • Camp Bugaloo, $☎ BH	19 • EWCPublic Tours
20 • EWC Public Tours	21 Martin Luther King Day	22	23 ★ Members' Day: Charlie Brennan. ST	24	25	26 • Hot, Hot, Hot! BH
27	28	29	30	31		

Visit and See...

- Colors and textures of ornamental grasses, berries, and witchhazel on the grounds.
- Lush tropical blooms and foliage inside the Climatron® conservatory.
- Camellias in the Linnean House mid-February.
- Early spring in the Temperate House in March.

February 2008

average temperature: 35.4
average monthly precipitation: 2.28 in

What's in bloom?

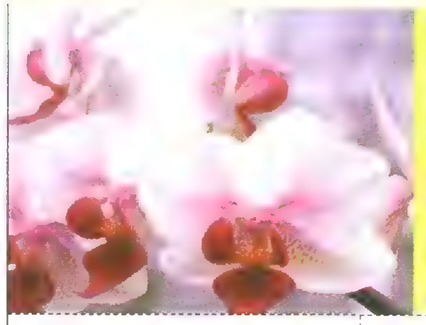
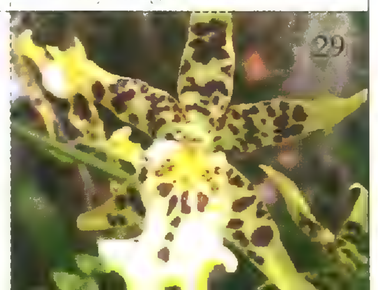
orchids

chenille plant

fragrant honeysuckle

clerodendrum

paperbush

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	February 2 – March 16 See page 25.			*honoring Black History Month* See page 25.	★ Orchid Show Members' Preview. RC	01 • New Member Orientation. noon. ST • Orchid Show 2008 opens. RC • Book signing. *Birth of Coffee*. 1-3 p.m. GGS • Coffee "cupping" by Ronnoco. 2-4 p.m. RC • Backyard Bird Festival. $☎ RC
02	03	04	05 Ash Wednesday	06 Chinese New Year	07 • Camp Bugaloo, $☎ BH	08 ★ Members' Day: Green Homes. ST ★ Members' Valentine Dinner Dance. RC
09 • Celebrate the Gospel. ST • Camp Bugaloo, $☎ BH	10	11	12	13 St. Valentine's Day	14 • Camp Bugaloo, $☎ BH	15 • Carver Days. RC • EWC Public Tours
16 • Carver Days. RC • EWC Public Tours	17 President's Day *Washington's and Lincol* • Carver Days. RC	18	19	20 • Science Café: Climate Change in Tibet. $ RC Register: (314) 289-4424.	21	22 • Gardening Blitz Weekend. $☎ KC • Sugared, Spiced and Everything Iced. RC
23 • Gardening Blitz Weekend. $☎ KC • Sugared, Spiced and Everything Iced. RC	24	25	26 ★ Young Friends Coffee Tasting. ☎ RC	27	28	29 

March 2008

average temperature: 45.8
average monthly precipitation: 3.6 in.

daffodils

crocus

cherry trees

hyacinth

forsythia

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Members' Eggstravaganza March 22, 10 a.m. to 12:30 p.m., See page 27.					01 Tower Grove House re-opens.
02	03	04	05	06	07	08 ★ Members' Day: Flowers for Kids. JE EWC Public Tours
09	10	11	12	13	14	15
16 Palm Sunday Orchid Show last day. RC Garden at Night exhibit opens. RC EWC Public Tours	17 St. Patrick's Day	18	19	20	21 Good Friday	22 ★ Members' Eggstra ☎ CL Horticultural Ther Awareness Day. F
23 Easter Easter brunch at Sassafras. $☎ SS	24	25	26	27	28	29
30	31				★ Members' Day: Garden Photography at Night. ST	Nature Explore Classroom and Tale Travelers. SNR

Missouri Botanical Garden Library
3 1753 00347 4837

photos by Ian Adams, Lisa Francis, Jack Jennings, Cindy Lancaster, Brian Mueller, and Erin Whitson.

Worried about highway construction?
The Garden is...

conveniently located off

For latest directions, visit www.mobot.org.

General information

Hours

The Garden is open every day except December 25, 9 a.m. to 5 p.m. Parking is free.

General admission*

Adults age 13–64 ..... $8
Members and children 12 and under .... free

St. Louis City and County visitors, with proof of residency, receive a discount on admission and free admittance on Wednesday and Saturday mornings until noon (unless special event pricing applies).

**Special events require an additional fee.*

Phone numbers

General Garden ..... (314) 577-5100
Education ..... (314) 577-5140
Group Tours ..... (314) 577-0275
Membership ..... (314) 577-5118
Institutional Advancement ....(314) 577-9500
Hort. Answer Service ..... (314) 577-5143
Volunteer ..... (314) 577-5187
24-Hour Event Hotline .....(314) 577-9400

GARDEN GATE SHOP
(314) 577-5137
9 a.m. to 5:30 p.m. daily.
Members 10% off every day,
20% off on members' days.

Catering St. Louis
(314) 577-0301
Now booking 2008 parties and events at the Garden.

MISSOURI BOTANICAL GARDEN
P.O. Box 299 • St. Louis, MO 63166-0299

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Editor: Elizabeth McNulty
Designer: Ellen Flesch
Cover photo: Orchid Show. Photo by Brian Mueller.
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The *Bulletin* is a benefit of Garden membership.

The BULLETIN (ISSN 0026-6507) is published quarterly by the Missouri Botanical Garden, 4344 Shaw Blvd, St. Louis, MO 63110.
Periodicals postage paid at St. Louis, MO

Postmaster: Please send address changes to: *Bulletin*, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299.

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MISSOURI BOTANICAL GARDEN

bulletin

Spring 2008 Vol. 96, No. 2 www.mobot.org

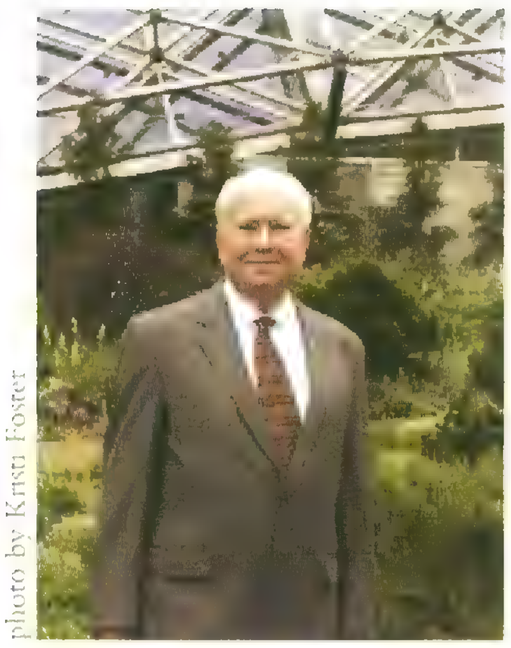

photo by Kristi Foster

President's Comment

Springtime is here! The fragrance of hyacinths drifts in the air while daffodils nod their heads in the breeze and tulips unfurl their dazzling array of colors. Now in bloom: over 90,000 bulbs, those wonderful reminders of the regenerative power of nature.

A connection to nature is such a powerful force in our lives. Without it, children don't develop an interest in biology and botany and conservation. Sustainability education is the future, and the Garden is uniquely positioned to offer learning adventures in the natural world at the Doris I. Schnuck Children's Garden, reopening for the season on April 1.

The Garden is a wonderful place for families. This year's *Niki* exhibition with its gigantic mosaic sculptures invites children to touch, sit, even climb the artwork. This is "do touch" artwork at its best, and we look forward to family-fun "Niki Nights" each Thursday. Chinese Culture Days brings international food and fun to the third weekend in May, and the Whitaker Foundation has graciously agreed to continue funding the Whitaker Music Festival, which kicks off in June.

New and exciting developments continue to unfold at the Garden, such as the return of the Chihuly *Trellises, 2006* to the Gladney Rose Garden. We are grateful to the generous donors who made this purchase possible.

Of course, we couldn't achieve current levels of success without so many talented people dedicated to our mission. We welcome several new trustees to our board: Mary Randolph Ballinger, W. Stephen Maritz, Cynthia Peters, Laura H. Reeves, and ex officio members Benjamin H. Hulsey and Richard T. Sullivan, Jr. Thanks are due to Nicholas Reding and Carolyn Losos, who continue to serve as chair and vice-chair. We also thank our Members' Board president, Carol Squires.

Your Garden membership helps support research in 36 countries where conservation needs are most urgent. The Garden has benefited from several recent grants and collaborations in Tanzania, Bolivia, Madagascar, and elsewhere around the world.

Henry Shaw left money in his Will to Christ Church Cathedral for an annual sermon each May on "the wisdom and goodness of God as shown in the growth of flowers, fruits and other products of the vegetable kingdom." May we all be so grateful for the diversity of creation, and work together to preserve our natural heritage!

Peter H. Raven

Dr. Peter H. Raven, *President*

To discover and share knowledge about plants and their environment, in order to preserve and enrich life.

—mission of the Missouri Botanical Garden

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Table of Contents

6–7 Science & Conservation
9,000 plants: Species by the Numbers in Costa Rica

10–13 Home Gardening
Belles of Spring: Daffodil Mania

18–19 Education
A Learning Adventure in the Children's Garden

Departments

From the President 2
News 4–5
Green Living. 8
History 9
In Your Garden Now 14–15
Making a Difference 16
Kidstuff 17
Family of Attractions 20–22
Tributes 23–25
Events & Calendar. 26–31

You've Got Mail

Don't miss the Garden's latest news, events, and offers. As a member, you are eligible to receive the Garden's monthly e-mail *Garden Gram*. Sign up today! Call (314) 577-5118, or e-mail linda.cherry@mobot.org.

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Sustainability Statement

The Missouri Botanical Garden strives to make the most sustainable choices for the future of people, plants, and the planet. The Missouri Botanical Garden *Bulletin* is printed on paper containing 100% post-consumer recycled content, that is, paper that you might have placed in the recycle bin in your home or office this year. It is manufactured using wind power, a renewable energy source. We print locally, so there is no long-haul transportation and we're reinvesting in our community. Why do we print at all? Why not go online? Because paper still has a place—in your purse or briefcase, on a plane, during lunch in the park. That's why we work hard to choose the most environmentally responsible paper around. So enjoy your *Bulletin* in good conscience—and once you've read it, please be sure to recycle it or pass it on to a friend.

News

Grand Openings

[illegible] April 1, with a grand opening on Saturday, April 5. The *Niki* exhibition opens Sunday, April [illegible]. See the April calendar at back for details.

photo by Heather Weaver

Workers cable the historic Scotch Elm.

Historic Tree Preserved

In February, local company Trees, Forests and Landscapes, Inc. donated the cabling of the historic Scotch Elm (*Ulmus glabra*) on the northwest corner of Tower Grove House. The tree dates to the era of the Garden's founding, but the huge lower limbs had become a structural risk. To access the constricted location, the crew utilized a Teupen lift—an unusual self-propelled machine with a working height of 70 feet, which nonetheless is capable of passing through a 3-foot opening. The stainless steel cabling lends supplemental support and should help preserve the tree's graceful silhouette for years to come.

Chihuly's Trellises, 2006 *returns seasonally.*

Trellises to Return

A vibrant piece of the 2006 *Glass in the Garden* exhibition—Dale Chihuly's *Trellises, 2006*—will return to the Garden permanently this spring. Due to the uniqueness and delicacy of the 278 different spirals which comprise the work, *Trellises, 2006* will be installed each spring and then removed for storage before freezing temperatures arrive each fall.

Trellises, 2006 becomes the fourth permanent addition of Chihuly art at the Garden. It joins *Missouri Botanical Garden Blue Chandelier, 2006* in the Ridgway Visitor Center, *Sunset Herons* in the Climatron® conservatory, and the 25 colorful *Walla Wallas* displayed seasonally in the Climatron reflecting pools.

Plastic Pot Recycling Expands

New in 2008, gardeners will have all summer and then some to recycle horticultural plastic pots and trays. Now in its tenth year, Plastic Pot Recycling has expanded and will collect from May 1 through October 31. The collection was formerly six weekends in May-June. Recycling trailers will be in the same location as in previous years—the west parking lot of the Monsanto Center at 4500 Shaw. Please sort pots according to the bins. Clean plastic pots only and no metal hangers. The recycled plastic will be turned into landscape timbers and raised bed kits, which may be ordered at the Kemper Center for Home Gardening.

State Champion Trees

The Missouri Department of Conservation has certified three State Champion Trees at the Garden. Size is calculated using a formula that takes into account a tree's height, crown spread, and trunk circumference. The winners are:

- The deciduous white basswood (*Tilia heterophylla*), prized for its wood and sweet-scented flowers. Towering above the Museum Building, the Garden's tree is 103 feet tall with an 81-foot spread.
- The 52-foot tall western soapberry (*Sapindus drummondii*) near the Lehmann Rose Garden, which has glossy green leaves that turn a showy yellow-gold in autumn.
- The possumhaw (*Ilex decidua*) across from the Museum Building, is a small tree or shrub and displays colorful orange-red berries throughout winter. The average possumhaw is seven to 15 feet tall with a similar spread. The Garden's tree is 18 feet tall with a 33-foot crown spread.

photo by Heather Weaver

Missouri State Champion White basswood.

photo courtesy Peter Jørgensen

Garden curator Peter Jørgensen (center) with Bolivian staff.

Documenting an Andes "Hot Spot"

The Andean forests of northern Bolivia are one of the world's premier biodiversity "hot spots," with an estimated 12,000 species of plants, or 60 percent of the country's flora. The area is relatively unknown to science—we do not understand how species are distributed and why these forests are so diverse. A new grant from the National Science Foundation will fund a project by Garden curator Peter Jørgensen and colleagues to document these forests. Scientists will create a checklist of the species found there in order to aid conservation planning and global climate change studies. The project will train 28 university students. The work is a collaboration with the Royal Botanical Garden in Madrid and the Bolivian National Herbarium.

photo courtesy Roy Gereau

Garden associate curator Roy Gereau (right) with collaborators.

Global Climate Change in Tanzania

The Kenya-Tanzania borderlands include such famous tourist destinations as the Maasai Mara National Reserve, Serengeti National Park, and Mount Kilimanjaro. The region is home to one of Africa's greatest concentrations of plant and animal life. Human populations have lived in relative equilibrium here for many millenia; however, global and local climate change now threaten this equilibrium. A new grant from the Liz Claiborne/Art Ortenberg Foundation will fund a project by Garden assistant curator Roy Gereau and colleagues to map the biodiversity of the borderlands and assess the threats. The work is a collaboration with African Conservation Centre, the University of York, the University of California San Diego, and several national institutions in Kenya and Tanzania.

Garden's Madagascar Program Blooms

The island nation of Madagascar, off the east coast of Africa, is among the poorest countries in the world—and also one of the most important in terms of biodiversity. Garden scientists have conducted research in Madagascar since 1972. Today, the staff includes 54 Garden-trained Malagasy botanists, who help identify conservation priorities and work with local communities to develop sustainable agricultural techniques so villagers can survive without destroying the forest.

photo by Josh Monken

In January, the Garden held a workshop in St. Louis for Madagascar staff and Washington University faculty and students.

St. Louis Collaborations

"The bottom line is, poverty screams louder than our message of conservation," said Armand Randrianasolo, Ph.D., an associate curator at the Garden. In 2006, the Garden joined forces with Granite City, Illinois-based nonprofit The Blessing Basket Project®, who brought their "prosperity wages" model to basket weavers in the small village of Mahabo, Madagascar. The fruits of their labor, the Blessing Baskets, are available for purchase at the Garden Gate Shop.

In an innovative new collaboration between the Garden and Washington University, the Skandalaris Center for Social Entrepreneurship studied this project's economic impact: "The first year's production contributed more than 10 percent to the entire economy in Mahabo," said Ken Harrington, managing director of the Skandalaris Center. "This is more than four times normal economic growth for Madagascar, which is historic. We are studying the full impact to see if this success can be replicated."

Vegetation Mapping

The Garden, in collaboration with the Royal Botanic Gardens, Kew, and Conservation International, has released the first comprehensive vegetation atlas of Madagascar. The atlas shows that a mere 18 percent of the country's native vegetation remains intact and that a third of its primary vegetation has disappeared since the 1970s. The atlas aids conservation by identifying which types of primary vegetation are rarest and currently disappearing fastest. The Madagascar Vegetation Mapping Project was funded by the Critical Ecosystem Partnership Fund.

Climate Change

The Garden has just been awarded a three-year grant from the John D. and Catherine T. MacArthur Foundation that will enable stakeholders to understand and deal with the impacts of climate change on this island's remarkable biodiversity. The grant will be used to establish a series of monitoring sites, develop a model for conservation in a changing environment, pilot ecological restoration techniques, and disseminate findings to key decision-makers to help guide policy and decisions made within the country.

9,000 plants,
19 years,
7 books,
2 curators,
1 manual

New Species by the Numbers in Costa Rica

Garden curator Barry Hammel collects plants at Fila Aguabuena. Fifty-four new species were discovered in Costa Rica in 2007.

Today, in every country on Earth, species are becoming extinct at an unprecedented rate. The work of Missouri Botanical Garden scientists is the plant science base on which conservation stands. Community-based efforts empower local populations to protect the future for us all.

It is known as the jewel of Central America,

a tropical paradise of biodiversity, an ecotourism haven. Named the "rich coast" by Christopher Columbus, who was impressed by the inhabitants' gold ornaments, Costa Rica today is stable, democratic, and as part of the land bridge between continents, rich in wildlife. The country covers only 0.03 percent of the earth's surface, but contains approximately six percent of the world's biodiversity.

National parks, forest reserves, and Indian reservations cover almost 27 percent of the country. Even with such an exemplary system, Costa Rica has suffered in recent years from deforestation, largely the result of land clearing for cattle ranching and agriculture, and as in many tropical countries, the flora of Costa Rica is still poorly known.

Since 1989, the Garden has been engaged in a race against habitat destruction to record the plants of the country. In collaboration with the Museo Nacional and the Instituto Nacional de Biodiversidad, and with support from the National Science Foundation, Garden Curators Michael Grayum and Barry Hammel have been hard at work on a manual of Costa Rican plants—*Manual de Plantas de Costa Rica.*

When complete, the *Manual* will encompass seven volumes and describe all known species of flowering plants in Costa Rica. The fourth volume, published in 2007, included some 1,396 species! To produce the *Manual*, a network of researchers across Costa Rica is

busy collecting plant specimens from poorly known areas and computerizing plant collection records. Garden, Costa Rican, and other specialists from around the world are collaborating to produce the written volumes.

photo courtesy Barry Hammel

Achimenes misera

In 2007, Garden scientists in Costa Rica recorded the discovery of 54 new species—and this impressive number is about average for each of the last 15 years of intensive work in Costa Rica. Twenty-two of this year's discoveries were new only to the country. For example, species such as *Topobea arboricola* were previously known from nearby Panama and thus it was not surprising to find them in Costa Rica. Others, such as the tiny *Achimenes misera*, are disjunct; that is, they were previously known only from faraway areas, and scientists must create hypotheses to explain this mystery of distribution. Fully 32 discoveries made in 2007 have never been documented anywhere before and are completely new to science, such as a *Ruellia* so different from any other *Ruellia* species known in Costa Rica that scientists in the field suspected it was new even before specialists reviewed it.

What does it mean to find a new species?

Sometimes a new species is essentially discovered by the botanist who collected it; i.e., he or she already has enough knowledge to know that it is a new species, right there in the field. Many times, however, the discovery comes long after the field trip. Sometimes a scientist sitting in the office, studying herbarium specimens collected years ago by someone else, may suddenly realize, "Wait! This doesn't match anything else!" It is still a thrill. Specialists are consulted; reasons for a new classification are proposed and debated. It is important to remember that all descriptions of new species are *hypotheses*: someone later may find evidence that suggests they are actually members of a previously described species. ■

Why it matters

The common names of plants are notoriously suspect, and many plants look alike. Without a scientific identification, how can we be sure that the plant collected for its anti-nausea effect isn't confused with another plant that it resembles, but one that has no health properties at all? Every single plant discovered in Costa Rica each year, from the tiniest orchid to the largest tree, adds significantly to the biodiversity of the country and is full of the same potential to fill gaps in our knowledge about the history of the earth and the biology of its organisms. Your Garden membership helps fund these critical science and conservation programs around the world. ■

photo courtesy Barry Hammel

The Costa Rica team on curator Mike Grayum's most recent National Geographic expedition explores the Volcán Cacao.

Fast Facts: Costa Rica

Location: Central America between the Caribbean Sea and the Pacific Ocean, and between Nicaragua and Panama

Geographic Area: 51,100 sq. km. (slightly smaller than West Virginia)

Capital: San José

Population: 4.13 million

People: 94% white (including mestizo), 3% black, 1% Amerindian, 1% Chinese, 1% other

Languages: Spanish (official), English

Money: Colones [1 USD = 495.96 CRC]

Politics: Colonized in 1563, Costa Rica declared independence from Spain in 1821. Óscar Arias Sánchez was elected president in May 2006.

Exports: bananas, pineapples, coffee, melons, ornamental plants, sugar; seafood; electronic components, medical equipment

Butterfly House Conservation

While the Garden's scientists are working to discover and share knowledge about plant life in Costa Rica, the Sophia M. Sachs Butterfly House is working to conserve Costa Rican rain forests as well. Funds used to purchase pupae in the last two years have saved nearly 20 acres as part of El Bosque Nuevo ("The New Forest"), a butterfly farm reforestation effort.

The Butterfly House purchases thousands of tropical butterfly pupae each year from farms in Malaysia, Thailand, Surinam, Ecuador, and Costa Rica. Revenue generated by these butterfly farms gives vendors an economic incentive to avoid harmful slash-and-burn agriculture and cattle ranching, but only in Costa Rica has one butterfly farm taken the next step—actual conservation of the land.

V for Delicious!

Grow Your Own Veggies for Fun and Health

Some of the steps we take, learning to live green, might sound familiar to our grandparents. As the World War II generation knew only too well, living green is about avoiding waste. Don't pitch that frayed dishtowel—save it for a quilt. Recycle your cans—the metal has value. Leave your grass clippings on the yard—it's free fertilizer. Walk, don't drive—gas costs money, and you'll be healthier for the exercise. This philosophy of "waste not, want not" is also about simple pleasures, such as the joy of growing your own food.

Victory gardens were grown during the World Wars to reduce pressure on the public food supply. They were also a morale-booster. Gardeners felt empowered by their contribution of labor, and they enjoyed fresh produce during a time of shortage.

With the rise of the slow food, organic, and locally grown movements, excellent quality produce is more available than ever before—just a farmers' market or a grocer away. But why not live green by growing your own? The physical labor of gardening contributes to your health and, as best-selling author Michael Pollan (*The Omnivore's Dilemma*) writes in his new book *In Defense of Food*, "The food you grow yourself is fresher than any you can buy."

No space? No problem. Vegetables grow well in containers, and vertical gardening with vining varieties is a must for maximum home yields. Worried about aesthetics? While the American kitchen garden has typically been a bare rectangle of soil stuck out on the edge of the yard, new thinking (actually old thinking) recalls medieval monastic gardens, which served as vegetable gardens and as locations for meditation and prayer.

In *Designing the New Kitchen Garden*, author Jennifer Bartley proposes a return to the *potager* (pronounced poh-tah-ZHAY). In French, *potage* means a vegetable soup. The potager is thus a vegetable garden, but it is ornamental, year-round, and includes vegetables, herbs, and flowers in a structured geometry. Her book contains several designs. Other references are available in the Kemper Center for Home Gardening library. Bartley writes: "The potager…should be as elegant as the specialty food that is grown there."

This brings us to plant selection. Most vegetables are easily grown from seed. Heirloom vegetables are varieties grown during earlier periods in human history and not in modern, large-scale agriculture. They often have superior flavor and

World War II Victory Garden poster.

nutritional value, not to mention historical interest. Also, it's good for biodiversity to grow more varieties of plants. One of the first companies to popularize heirloom varieties was the Seed Savers Exchange, a nonprofit founded in 1975 (www.seedsavers.org). We are also lucky to have one of the largest purveyors in Missouri: Baker Creek Heirloom Seeds (www.rareseeds.com). The Garden Gate Shop also carries several varieties of seeds, including heirlooms.

Vegetable gardening is a full-circle activity. Before you know it, you'll be composting your eggshells, coffee grounds, and yard waste to improve your soil. Waste not, want not! Visit www.gardeninghelp.org and download the Kemper Center for Home Gardening's fact sheet on "Growing Vegetables at Home," and you'll be on your way!

Retro lawn furniture looks great in the garden!
Fun colors won't fade. Sturdy seamless steel with
a vivid UV-resistant powder coat finish. Order
yours delivered at no additional charge!
GARDEN GATE SHOP

photo courtesy MBG Archives

Henry Shaw

(1800–1889)

First opened to the public in 1859, the Missouri Botanical Garden is a National Historic Landmark and the oldest botanical garden in continuous operation in the nation. The year 2009 will mark the Garden's 150th anniversary, or sesquicentennial (from the Latin sesqui, *one and a half, and* centum, *hundred). Throughout 2008, we will explore interesting aspects of the Garden's history.*

Henry Shaw carved this curio box in wood from his boyhood church.

Henry Shaw, the Man (Part 1)

by Andrew Colligan, archivist

Henry Shaw offered the city of St. Louis and the world something to remember him by when he established the Missouri Botanical Garden and created Tower Grove Park. Other than his detailed business papers, however, Shaw left little personal material for biographers to consider in analyzing his life. Perhaps, as his biographer Thomas Dimmock wrote, he was "anxious only that his works should live and speak for him when he had gone." Nonetheless, we do know the outlines of Shaw's life.

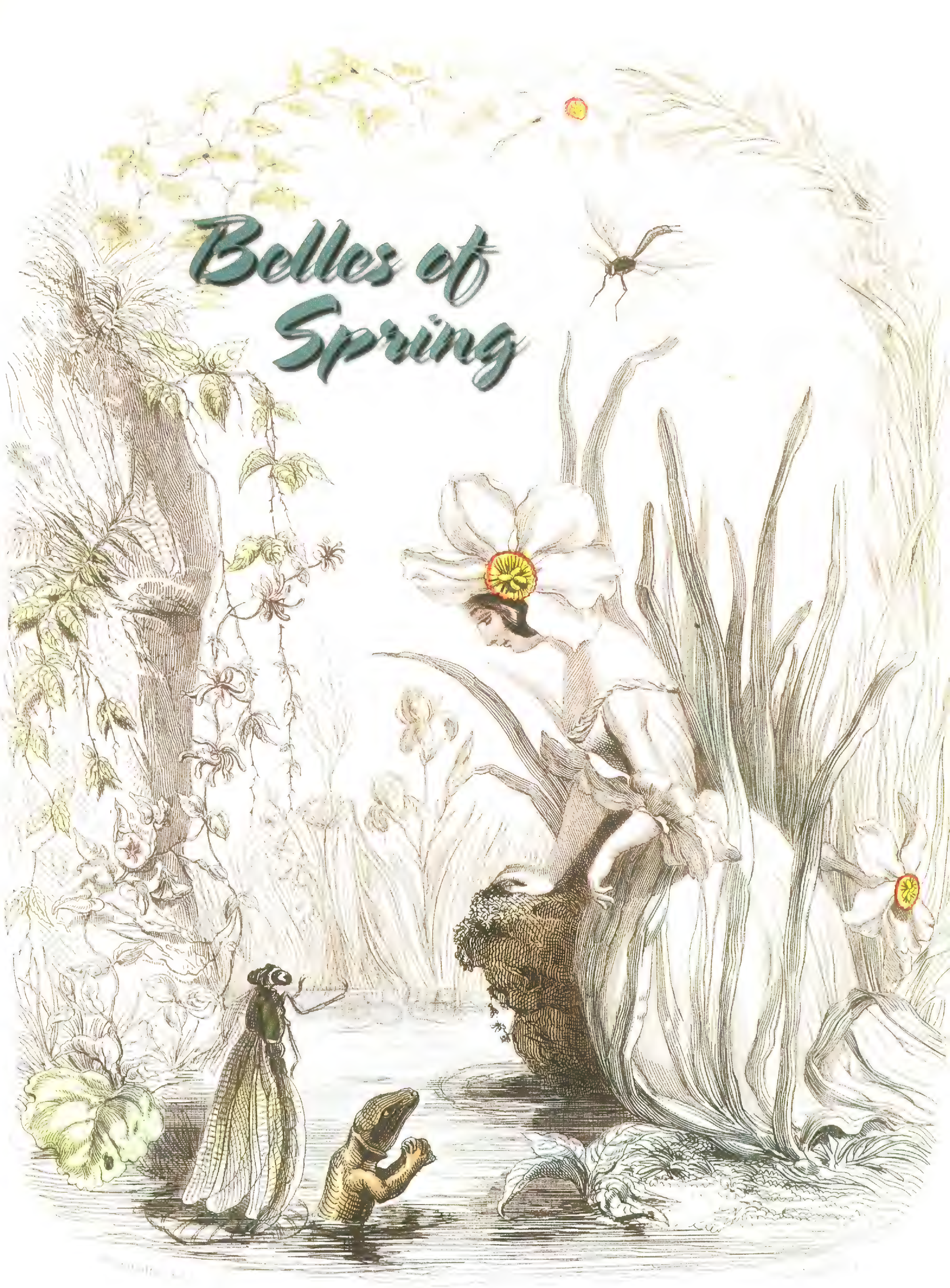
Born in Sheffield, England on July 24, 1800, Henry Shaw was the oldest of four siblings. He was educated at the Mill Hill School ten miles outside London, known for producing learned English gentlemen, and returned to Sheffield to work in his father's business. Sheffield was the center of the English cutlery industry, and the Shaws manufactured ironware. In 1818, young Henry traveled to the New World on his father's affairs—to Canada and New York City. Finally, in New Orleans, he decided to strike out on his own in a new location.

Shaw made the slow journey up-river on the riverboat *Maid of Orleans*. On May 4, 1819, he arrived at the small French trading port of St. Louis, the jumping-off point for westward-bound settlers. Shaw established a business selling cutlery and general goods to those passing through on their way to the frontier. A fellow merchant at the time, Frederick L. Billon, described Shaw's humble beginnings: "With little means he began business on the second floor of a building which he found for rent, and for a time, lived, cooked, and sold his goods in this one room. I have sat with him many a time, playing chess during the long evenings."

Over the course of the next twenty years, Shaw's frugality and business acumen reaped great dividends. Shaw reviewed his balance sheets for the year 1839 and, to his great surprise, he had realized a net profit for the year of $25,000, bringing his total holdings to a quarter-million dollars. Shaw could not believe the sum to be correct but after pouring over his figures he came to accept the fact, later declaring "this was more money than any man in my circumstances ought to make in a single year." Shaw sold his entire stock of merchandise and closed shop as soon as possible. In 1840, at the age of forty years old, Henry Shaw was retired from retail trade, in good health, and with the considerable sum of $250,000 at his disposal.

Next issue: how an English cutlery merchant came to create one of the world's premier botanical gardens.

Belles of Spring



In England, they are known as daffodowndilly, dillydaff, daffdilly, cuckoo-rose, Lenten lilies, Fairy bells, Butter-and-eggs, and on and on,

suggesting their lengthy history in the English countryside, and their status as beloved harbingers of spring. In keeping with this theme, the German is *Osterglocken*, or "Easter bells." In the Southern U.S., they are known as jonquils, but this is actually a type of daffodil (division 7, to be specific). The common name "daffodil" derives from Medieval Latin *affodilus*, and ultimately from Greek *asphodelus*, the asphodel. The initial "d" may have slipped in from the French *fleur d'afrodille*.

Daffodils, or as they are more correctly known by their genus, *Narcissus* have been beloved for their beauty and delicate fragrance since Biblical times and across many cultures. A quote from the writings of the prophet Muhammad: "He that has two cakes of bread, let him sell one of them for some flowers of the *Narcissus*, for bread is food for the body, but *Narcissus* is food of the soul."

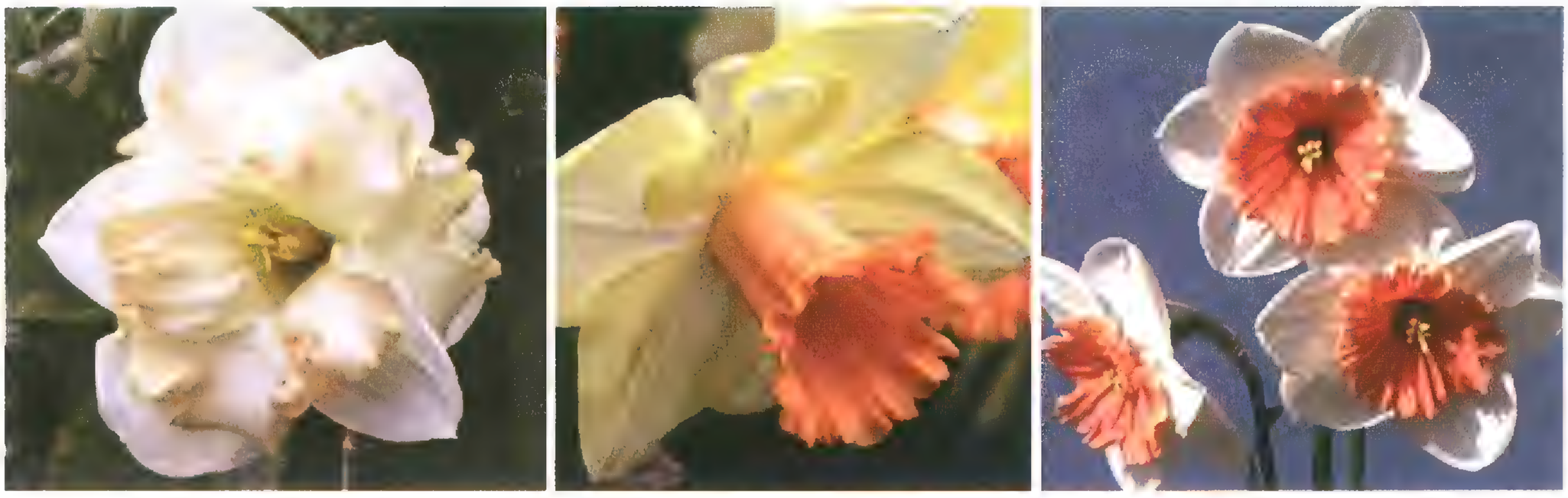
Narcissus are native to the Western Mediterranean—to Portugal, Spain, the south of France, and the north of Morocco. However, they have been extensively cultivated, spreading throughout Europe and along trade routes through the Middle East to China and Japan, and eventually America. William Turner's 1548 herbal lists 24 varieties, but unlike tulips, *Narcissus* hybrids were not rapidly developed. It wasn't until the 19th and early 20th centuries that we entered the golden age of *Narcissus* hybridizing. Today, the Throckmorton Daffodil Data Bank lists nearly 15,000 registered daffodil cultivars, organized by shape into 13 divisions.

The Garden's senior outdoor horticulturist Jason Delaney was born into daffodils. His mother, while pregnant with him, planted daffodils along the family's property line. As a child, he was fascinated with these 'Easter flowers.' Today, as caretaker of the Garden's collection, he can identify over one thousand cultivars by sight. In 2002, Delaney launched the Garden's daffodil hybridizing program. He is past president of the Greater St. Louis Daffodil Society and has held various positions with the American Daffodil Society. In his spare time, he runs a commercial daffodil

The daffodil is...

- in the Amaryllis family.
- the national flower of Wales
- the birthflower of March.
- undisturbed by squirrels, moles, voles, deer, and almost all pests, thanks to toxic and distasteful—alkaloids.

The botanical name Narcissus *harks back to Greek mythology. Narcissus was the beautiful boy who fell in love with his own reflection in a pool of water. He wasted away there and the flowers sprang up in his place. The graceful nodding head of the* Narcissus *bloom recalls the boy's down-turned gaze. Illustration:* Narcisse *from* les fleurs animées *by J.J. Grandville (Paris: Gabriel de Gonet), 1840s. To see more rare book illustrations from the Garden's library, visit www.botanicus.org.*



New to the Garden's collection in 2008. From left: 'Etincelante,' 'Sagitta,' and 'Riot'.

operation. When asked what motivates him, he responds: "What can I say? I like daffodils!" We asked him some questions for spring.

While many hybridizers focus on cut-flower exhibition types, the Garden focuses primarily on display types with unique color combinations. Once the stock material has been selected, we perform the actual cross by applying pollen from one flower onto the pistil of another with tweezers. The crosses are then marked and recorded.

When will we see the new flowers?

A minimum of 15 years. Five years for new seeds to flower, five for seedlings to mature, and five more to produce stock—that's assuming any crosses were worthy. During years 15–20, the grower will select a name for the flower, register and introduce it. The goal is not often achieved with the first generation; it may take three or four—or the lifetime of the daffodil hybridizer. New daffodils may sell for $200 or more per bulb, a testament to the many years involved.

Early-season **'Gin and Lime'** features sulphur petals framing creamy ruffled trumpets. Blue-tinged foliage enhances the cool effect. Mid-season **'Swirling Baton'** has smooth white petals backing a broad pink cup with a frosty white ruffle. **'Pueblo'** is a late-season jonquilla daffodil bearing up to five neat little creamy white flowers per stem that seem to bloom forever—perfect for the floral arranger.

What's new for 2008 in the Garden's daffodil collection?

Last year, volunteers and staff lifted the permanent bulb collection for the first time in nearly ten years, allowing for the inclusion of many new varieties. Among new daffodils, look for the split-corona **'Etincelante,'** the trumpet **'Sagitta,'** and the large-cupped **'Riot'** with enormous pink cups and white petals. Several daffodil varieties were also permanently moved to the expanding naturalized collections in the Jenkins Daylily Garden and Knolls areas. ■

Nationally Recognized Collection

In 2007 the American Daffodil Society recognized

photo by Jack Jennings

Shaw Nature Reserve. In the 1930s, the Garden's Curator of Useful Plants, Dr. Edgar Anderson, initiated a program of evaluating Narcissus *varieties for dependability. Today these bulbs, naturalized over the last nearly 80 years, number in the hundreds of thousands. Peak bloom is early April.*

Narcissus as Medicine

The word *Narcissus* derives from the Greek *narke*, meaning "numbness, stupor," the same root as narcotic. Plutarch (*ad* 46–120) explained that the plant was so-called because it "benumbs the nerves and causes a stupid narcotic heaviness in the limbs." *Narcissus* contain mildly toxic crystalline alkaloids, but a little may have positive effect. Hippocrates (460–370 *bc*) prescribed *Narcissus* oil against uterine tumors. More recently, daffodil bulbs have been used to produce the chemical galantamine, which is one of the drugs used in the treatment of Alzheimer's disease.

References

- American Daffodil Society, website: www.daffodilusa.org
- Hanks, Gordon R. *Narcissus and Daffodil: the Genus* Narcissus. New York: Taylor & Francis, 2002.
- Jefferson-Brown, Michael. *Narcissus*. London: B.T. Batsford, 1991.
- Old House Gardens, website: oldhousegardens.com
- Pictured on the front cover: *Narcissus* 'Mite,' a cyclamineus daffodil.

The Expert Green Thumb

by Chip Tynan, Garden Answer Man

An expert might perhaps be inspired by Jason Delaney to attempt breeding his or her own daffodil hybrid. I considered the thought, until I discovered someone had already done the job for me. A few years back, I obtained *Narcissus* 'Tynan' from a small grower in North Ireland. The only commercial source of this obscure, large-cupped daffodil, it has since shuttered. Nonetheless, 'Tynan' blooms happily in my yard each spring, or I should say, most springs, which brings me to the expert advice.

What does a gardener need to know about daffodils? Satisfy their cultural requirements, and they are among the most trouble-free plants to grow. Their worst enemies are deep shade and wet feet. Forget about herbivores. Even deer, voles, and moles won't touch them. What could possibly go wrong?

- **Cold-weather-induced bud blast.** Buds form, but if they are hit by a late hard freeze, never open. It won't happen most years, thankfully, and so long as you leave the leaves intact, the bulbs should recover.

- **Fertility.** Broadcast a light application of 5-10-10 fertilizer in spring when leaves appear and again at flowering. Avoid high-nitrogen formulations which produce leaves at the expense of blooms.

- **Crowding.** *Narcissus* will eventually compete with each other for food, resulting in weak blooms all around. Every few years, you should divide vigorous clumps and transplant as the foliage yellows.

- **Bad stock.** Daffodils are a long-term investment, so buy top quality from a good grower. New bulbs should be big and blemish-free.

- **Fussy gardener.** Allow the leaves to remain on the plant until they yellow, gathering energy for next year's bloom. If you cut them prematurely—or even braid or bind them—they will not absorb enough energy.

What to do in your garden now...

clip and save

April

all month

- ❑ Start mowing cool season grasses.

week 1

- ❑ Start cucumber, cantaloupe, summer squash, and watermelon seeds indoors. Finish sowing seeds of all cool-season vegetables not yet planted outdoors.
- ❑ Plants started indoors should be hardened off before being transplanted.
- ❑ Asparagus and rhubarb harvests begin.
- ❑ Winter mulches should be removed from roses. Complete pruning promptly. Remove only dead wood from climbers at this time. Cultivate lightly, working in some compost or other organic matter.
- ❑ Shrubs and trees best planted or transplanted in spring rather than fall include butterfly bush, dogwood, Rose of Sharon, Black gum (*Nyssa*), vitex, red bud, magnolia, tulip poplar, birch, ginkgo, hawthorn, and most oaks.
- ❑ Plant bareroot or potted fruits as soon as the soil can be worked. Remove tree wraps from fruit trees.
- ❑ Mount a rain gauge near the garden to track precipitation. Most gardens need about 1 inch of rain per week between April and September.

week 2

- ❑ Finish transplanting broccoli, brussels sprouts, cabbage, and cauliflower plants into the garden.
- ❑ Sow seeds of hardshell gourds indoors. Soak seeds overnight before planting.
- ❑ Thin out crowded seedlings from early plantings of cool-season crops such as beets, carrots, lettuce, onions, and radish.
- ❑ Examine shrubs for winter injury. Prune all dead and weakened wood.
- ❑ When crabapples are in bloom, hardy annuals may be transplanted outdoors.
- ❑ Fertilize established roses once new growth is 2 inches long.
- ❑ Do not prune boxwoods before April 15.
- ❑ Destroy or prune off webs of eastern tent caterpillars. Protect bees and other pollinating insects.
- ❑ Aerate turf if thatch is heavy or if soil is compacted. Topdress low spots and finish overseeding thin or bare patches. Apply crabgrass preventers before April 15. Do not apply to areas that will be seeded.

week 3

- ❑ Try an early sowing of warm-season crops such as green beans, summer squash, sweet corn, New Zealand spinach, and cucumbers. Flower stalks should be removed from rhubarb plants, if they develop.

week 4

- ❑ Begin planting lima beans, cucumbers, melons, okra, and watermelons. Begin setting out transplants of tomatoes, eggplants, peppers, and sweet potatoes.
- ❑ Easter lilies past blooming can be planted outdoors. Mulch well.
- ❑ Shear evergreen and deciduous hedges.
- ❑ Begin planting out summer bulbs such as caladiums, gladiolus, and acidanthera.
- ❑ Prune spring-flowering ornamentals after they finish blooming.

May

all month

- ❑ If spring rains have been sparse, begin irrigating, especially plants growing in full sun.
- ❑ Growing lettuce under screening materials will slow bolting and extend harvests into hot weather.
- ❑ Mulch blueberries with pine needles or sawdust.
- ❑ Keep bluegrass cut at 1.5 to 2.5-inch height. Mow tall fescues at 2 to 3.5-inch height.

week 1

- ❑ Begin planting gladiolus bulbs as the ground warms.
- ❑ Plant hardy water lilies in tubs or garden pools.
- ❑ Continue monitoring pines for sawfly activity on new shoots.
- ❑ Don't remove spring bulb foliage or next year's flower production will decline.
- ❑ Set out and stake tomato plants as soils warm.
- ❑ Begin planting sweet corn when white oak leaves are as big as squirrel ears (isolate varieties to prevent crossing).
- ❑ Keep asparagus harvested for continued spear production (control beetles as needed).
- ❑ Thin plantings of carrots and beets to avoid overcrowding.
- ❑ Control caterpillars on broccoli and cabbage plants by handpicking or use biological sprays.
- ❑ Don't spray fruits while in bloom.

week 2

- ❑ Begin planting warm-season annuals.
- ❑ Plant summer bulbs such as cannas, caladiums, dahlias, elephant ears.
- ❑ Place a stake by squash and cucumber seeds when planting in hills to locate the root for watering later.
- ❑ Mow zoysia lawns at 1.5-inch height. Remove no more than one-half inch at each mowing. Apply post-emergence broadleaf weed controls now if needed.

week 3

- ❑ Scale crawlers are active. Treat infested pines and euonymus now. Spray trees with a history of borer problems (repeat twice at 3-week intervals).
- ❑ Begin fertilizing annuals.
- ❑ Bulbs can be moved or divided as the foliage dies.
- ❑ Remove rhubarb seeds stalks as they appear.
- ❑ Set out peppers and eggplants after soils have warmed.
- ❑ Plant sweet potatoes.
- ❑ Zoysia lawns may be fertilized now. Apply no more than 1 lb. of actual nitrogen per 1,000 sq. ft.

week 4

- ❑ Pinch back mums to promote bushy growth.
- ❑ Sow warm-season vegetables after harvesting early crops.

photo by Leslie Wallace

June

all month

- ❑ Water turf as needed to prevent drought stress. No need to remove clippings unless excessive. Gradually increase the mowing height of zoysia lawns throughout the summer. By September, the mowing height should be 2 to 2.5 inches. Mow bluegrass at 2 to 3.5 inch height. Turfgrasses growing in shaded conditions should be mowed higher.

week 1

- ❑ Watch for bagworms feeding on many garden plants, but especially juniper and arborvitae.
- ❑ Deadhead bulbs and spring perennials as blossoms fade.
- ❑ Thin seedlings to proper spacings before plants crowd each other.
- ❑ Repeat plantings of corn and beans to extend the harvest season.
- ❑ Oriental fruit moths emerge. Most serious on peaches where first generation attacks growing tips. Prune out wilted shoots.
- ❑ Thinning overloaded fruit trees will result in larger and healthier fruits.
- ❑ Zoysia can be fertilized now while actively growing. Do not exceed 2–3 lbs. of actual nitrogen fertilizer per 1,000 sq. ft. per year.

week 2

- ❑ Apply organic mulches as the soil warms.
- ❑ Apply a balanced rose fertilizer after the first show of blooms is past. Apply a second spray for borer control on hardwood trees.
- ❑ Renovate strawberries after harvest. Mow the rows, thin out excess plants, remove weeds, fertilize, and apply mulch for weed control.
- ❑ Summer fruiting raspberries are ripening now.

week 3

- ❑ Plant tropical water lilies when water temperatures rise above 70 degrees.
- ❑ Pruning of spring-flowering trees and shrubs should be completed before month's end. Softwood cuttings can be taken from trees and shrubs as the spring flush of growth is beginning to mature.
- ❑ Begin control for apple maggot flies. Spray trunks of peach trees and other stone fruits for peach tree borers.

week 4

- ❑ Trees and shrubs may still be fertilized before July 4.
- ❑ Spray roses with a fungicide to prevent black spot disease.
- ❑ Prune and train young fruit trees to eliminate poorly positioned branches and to establish proper angles.

For additional information on plant care and gardening:

- *visit the William T. Kemper Center for Home Gardening.*
- *call the Horticultural Answer Service, Monday through Friday, 9 a.m. to noon, at (314) 577-5143.*
- *check out the Gardening Help section at www.mobot.org.*

photo by Erin Whitson

Featured Plant of Merit™

Double daffodil
Narcissus 'Tahiti'

A perennial favorite, daffodils are naturally deer-, rabbit-, and squirrel-resistant. 'Tahiti' features lightly fragrant, 4-inch, double flowers with showy yellow petals and frilly, bright orange-red cup segments. After bloom in April, deadhead the flower, but foliage should not be cut back until it yellows. Plant bulbs en masse in well-drained soil in late fall. Look for 'Tahiti' at the Garden this spring.

Plants of Merit™ is a program of the Missouri Botanical Garden. Plants are selected by regional horticulture experts for outstanding qualities and dependable performance in the lower Midwest. View all current PMs at www.plantsofmerit.org.

Plants of Merit™ Challenge

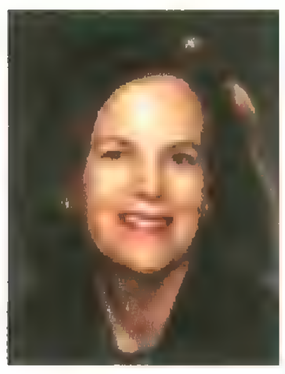
The Plants of Merit program has been awarded a generous challenge grant from the William T. Kemper Foundation – Commerce Bank, Trustee. For 2008 and 2009, the Foundation will match all new donations to the Plants of Merit program dollar for dollar up to $50,000 each year. Funding will help underwrite printing and distribution of program information materials, website development, plant trials, visits with nurseries and garden centers throughout the region, presentations at industry meetings, and more.

This is a great opportunity for Garden members to increase the impact of Plants of Merit. To participate, please contact the Institutional Advancement Office at (314) 577-9500.

Making a Difference

New Board Members

As stipulated in the 1889 Will of Henry Shaw, the governing authority of the Missouri Botanical Garden is the Board of Trustees. Trustees of the Garden bring proven records as community leaders in science, business, marketing, education, public service, and as community volunteers. Each Trustee has unique skills to add to the collective wisdom and knowledge to guide the Garden. In January, the Garden welcomed six new members to the Board of Trustees.



Mary Randolph Ballinger
A real estate agent with Janet McAfee, Inc., Mary Randolph Ballinger is also an avid gardener and was co-founder of the Garden's community-wide garden tour. She has served on the Garden's Members' Board, and currently serves on the boards of the Saint Louis Science Center, Saint Louis Art Museum, and the AKC Museum of the Dog. Her husband, Dr. Walter Ballinger, is former chair of the Washington University School of Medicine's Surgery Department.

W. Stephen Maritz
Chairman of the Board and CEO of Maritz Inc., Steve Maritz represents the fourth generation of his family to lead the company, now in its 110th year. He rose through the ranks from account executive to eventual head of sales and marketing before becoming president in 1997 and CEO in 1998. Maritz serves on the boards of the John M. Olin School of Business, the Variety Club, Laclede Gas, and the Greater St. Louis Council of the Boy Scouts of America.

Cynthia S. Peters
A graduate of Briarcliffe College, Cynthia Peters is the daughter of Ella and John Shoenberg, and niece of Sydney Shoenberg. An active community volunteer, Peters recently became a member of the Explorers Club. She has served on the boards of many institutions, among them, the Alzheimer's Association, COCA, the Art Museum, the Science Center, and the Historical Society. Along with her husband, Sandy, she played a vital role in bringing the works of Dale Chihuly to the Garden in 2006.

Laura H. Reeves
As Senior Director of Corporate Giving and Vice Chairman of Charitable Contributions, Laura Reeves directs Anheuser-Busch's charitable contributions program. A graduate of the St. Louis University School of Law, Reeves is also responsible for ensuring compliance with SEC rules and regulations, corporate laws, corporate governance and stock option matters. Reeves serves on the boards of St. Louis Children's Hospital, Villa Duchesne/Oak Hill School, and the SeaWorld & Busch Gardens Conservation Fund.

Benjamin Hulsey and Richard T. Sullivan join the board of trustees as ex officio members. Sullivan, chairman of McBride & Son Homes, is current president of the St. Louis Board of Education. Hulsey, a partner in Thompson Coburn, is a specialist in transactions and corporate governance and compliance.

Members' Board Updates

In January, the Garden held its annual meeting for the installation of new members and officers to the Members' Board.

Top, from left: 2008 Members' Board Officers Carol Squires (President), Janet Lange (First Vice President), Beth Sankey (Second Vice President), Angie Eckert (General Secretary), Kathleen Dudley (Members' Event Secretary), and Ted Atwood (Treasurer).

Above, from left: 2008 New Members' Board members with president Carol Squires, Parker McMillan, Laure Hullverson, and Ellen Martin.

Not pictured: Jacquelin Naunheim.

Members' Board Past Presidents

The Members' Board assists the Garden in its mission by organizing and implementing activities that encourage membership support, expand awareness, and increase the Garden's financial support. Last fall, the Members' Board recognized the accomplishments of the fourteen living past presidents, acknowledging the tremendous work and leadership of this dedicated group of volunteers.

From left: Ellen Jones, Sue Oertli, Nora Stern, Ellen Dubinsky, Ann Bowen, Marsha Rusnack, Liz Teasdale, Mary Longrais, Nancy Sauerhoff, Isabelle Morris, Susie Schulte, Jane Tschudy, and Sue Rapp. Not pictured: Mary Ella Alfring.

KIDSTUFF

Make a Rainbow Bouquet

Mother's Day is almost here. Why not make a one-of-a-kind rainbow bouquet for Mom?

YOU'LL NEED:

- 12 white carnations
- food coloring (red, yellow, blue, and green)
- six glasses, one for each color
- water

1. Place about an inch of water in each of the six glasses.
2. For the red, yellow, blue, and green, put about 20 drops of color into the water, one color per glass.
3. For purple, blend together 10 drops each of red and blue into one glass. For orange, blend together 10 drops each of red and yellow into the last glass.
4. Cut a half-inch off the end of the stems. Place two flowers, stems down, in each of the six glasses.
5. Watch: the petals begin to change color in just a few hours! The change from white to a color will be complete in about one day.

photo by Heather Osborn

A rainbow bouquet of carnations for Mother's Day.

WHY THIS WORKS:

There are small holes on leaves and petals which are too small to see, like pores, called *stomates*. When water evaporates out of the stomates, we call it *transpiration* (sort of like perspiration!). Just like humans, plants need water to stay healthy. When water evaporates, the plant needs to replace it. Plants in soil use their roots to suck water from the earth. The water goes up the stem to the leaves where the process starts all over again. We can see this process in the cut flowers—they took in the colored water directly through their stems and spread it to the petals, turning the flowers into a rainbow of hues!

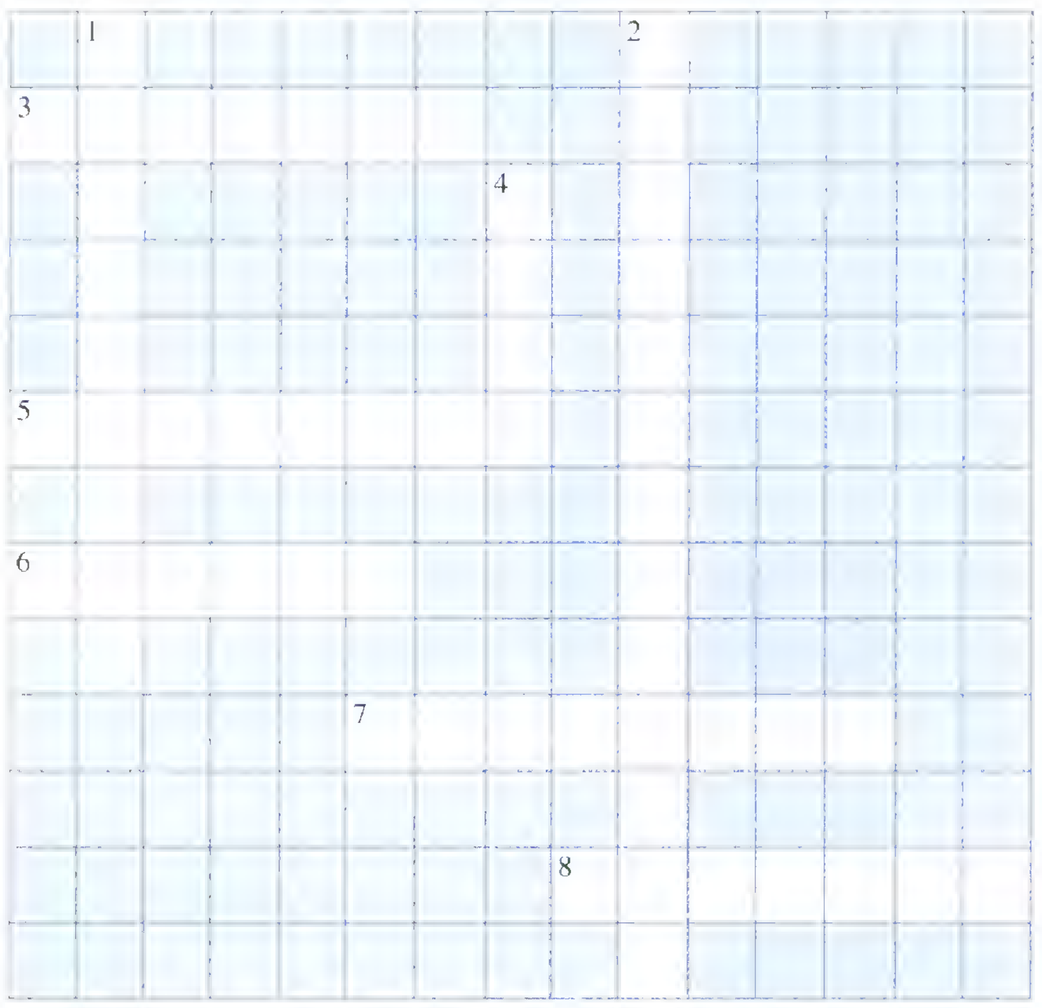
CROSSWORD

ACROSS

3. a prism of colors
5. small holes on leaves and petals
6. female parent
7. carnation
8. a bunch of flowers

DOWN

1. *Dianthus caryophyllus*
2. when water evaporates out of stomates
4. a gradation of a color



Answers: 1. carnation 2. transpiration 3. rainbow 4. hues 5. stomates 6. mother 7. dianthus 8. bouquet

Whoa! Did You Know?

- The scientific name for carnations is *Dianthus caryophullus*. Say it three times fast!
- Humans have grown carnations for over 2,000 years.
- The ancient Romans called carnations "Jove's Flower" i honor of their highest god.
- Carnations have been a symbol of Mother's Day since the holiday began in the U.S. in 1908.

A Learning Adventure in the Children's Garden

by Deborah Chollet Frank, Vice President, Education and Interpretation

"Curiosity is the wick in the candle of learning," wrote educator and author William A. Ward. What plants grow in Missouri? What plants become the food we eat? Why don't plants grow in a cave? Curiosity propels a child to be inquisitive, explore, and discover—all vital to educating for sustainability.

The 1987 U.N. World Commission on Environment and Development defined sustainability as: "Working to meet the needs of the present without compromising the ability of future generations to meet their own needs."

As our world has continued to mechanize and industrialize, many are less connected to the natural world, leading to a lack of care and concern for our environment. Recently, however, there has been a rallying cry throughout society for a mid-course correction. Many are now striving to align their work and lifestyles in a more sustainable direction. Everyone wants to grow green! Sustainability starts at home—and certainly, too, in school.

Dr. Louise Cadwell, Curriculum Coordinator of the College School in Webster Groves, recently spoke at a meeting of the St. Louis Reggio Collaborative on effective sustainability education. Cadwell stated, "Education for sustainability...fosters in children an empathy for and understanding of all people, animals, plants, and the earth." Developing this empathy and understanding these relationships are key building blocks in fostering the will to change behaviors, and to advocate for others to do so, to sustain our natural world—including humankind.

Children who learn about these connections to people, animals, plants, and the earth also learn about history. The historical context of factors which contributed to our current situation provides the backdrop for children as they learn to create sustainable strategies. How did people grow food in the 1800s? Why? How do we grow it now? Is that sustainable? Why or why not? Children learn from the past and begin to see that the choices they make can have a lasting impact—beneficial or harmful.

Grand Re-Opening of the Children's Garden

The Doris I. Schnuck Children's Garden opens for its third season on April 1, with a grand opening on Saturday, April 5 (see page 26). In the Children's Garden, you can experience key concepts of sustainability education in a fun, family-friendly setting. Learn how the natural environment influenced Lewis and Clark and Sacajawea and early settlers like Daniel Boone. Explore local ecosystems such as rivers, caves, and prairies—and you'll discover their importance to our local economy and the development of cities in the Midwest. Visit the new edible garden and you'll learn where some of your food comes from and how to grow your own.

Inspiring curiosity is our focus in the Children's Garden. The goal is to light that wick for the "candle of learning." Garden educators will be on hand throughout the Children's Garden to engage children in simple, meaningful observations and investigations of our natural world. Children will be invited to unearth fossils in the cave, track bees in the pollination garden, examine pond water up close, and study plants in our new edible garden—every visit can be a new learning adventure!

photo by Charles Schmidt

Great Green Adventures will also return this year. These drop-in family programs held on a regular basis (see sidebar) provide organized activities for children and their grown-up companions to discover together the extraordinary and entertaining world of plants and animals in our local environment. Learning alongside an adult mentor increases the probability that links will be made between knowledge gained during a discovery activity and life beyond the walls of the Children's Garden. Comprehending and integrating those connections are essential building blocks in sustainability education.

From our robust science and conservation programs throughout the world to our EarthWays Center promoting green practices within our homes and businesses, the Missouri Botanical Garden is making great contributions toward educating for sustainability. Engaging our youngest visitors in the connections among plants, people, and the planet is another key step on our path to a sustainable future. ■

Members Do More

New in 2008, all members' children receive free admission to the Children's Garden every Tuesday. Family-level members and above receive free admission every day. Upgrade and save! Call (314) 577-5118 or visit www.mobot.org

Exploring Trees Inside and Out

May 24 through September 1, Brookings Interpretive Center

Don't miss this summer's new interactive experience created by the Arbor Day Foundation. Learn about our tall woody friends, the trees, while having fun. Explore the inside of an oversized leaf, crawl through the hollow of a giant log, and more! *Presented by Doubletree Hotels.*

It's a Great Green Adventure!

April through October, Children's Garden Tuesday through Friday, 10 a.m. to noon, Saturday, 1 to 3 p.m.

Travel each week on a Great Green Adventure. Bring your kids and grandkids to these fun, educational programs in the Children's Garden (included with Children's Garden admission). Each month has a different theme, and each week has a different activity.

April – Show-Me Green Missouri
May – Kids in Bloom
June – Trees Inside and Out

EARTHWAYS CENTER

3617 Grandel Square, St. Louis, MO 63108
phone (314) 577-0220 • www.earthwayscenter.org

EarthWays Center classes and events offer information on a variety of environmental topics. Here: making recycled paper.

To Green, or Not *Too* Green

by Jean Ponzi, EarthWays Program Manager

As consumer interest in sustainability grows, "green" product promises are sprouting up too, but buyer, beware! "Greenwashing" is a buzzword for unsubstantiated, misleading, or patently false marketing claims. Like "brainwashing" or "whitewashing," this timely term alerts us to the need to read labels, ask probing questions, seek references, and understand the thinking behind genuine sustainability, compared to "hogwash."

The savvy consumer starts by looking for the logo of established certification systems, which can only be displayed on products that meet clearly defined standards. Examples include:

ENERGY STAR – The U.S. EPA's energy efficiency rating system evaluates energy-consuming products from light bulbs to appliances, insulation, heating and cooling systems.

FSC – The Forest Stewardship Council's guide to sustainably produced forest products applies to building materials and paper products.

Green Seal and Greenguard – These independent labs test for toxic substances in building improvement and maintenance products such as paints, stains, adhesives, cleaning products, carpeting, and fabrics.

Fair Trade – This evaluation combines social justice with environmental protection, signifying that product producers work for fair wages in safe and healthy working conditions.

USDA Organic – This federal-level certification documents food products grown without pesticides and chemical fertilizers.

However, even logo-certified items might not be the most sustainable choice in every situation. For example, locally grown produce would be even better than organic vegetables trucked across the country. It's important to trust your instincts when evaluating product claims. The EarthWays Center staff can help you research specific interests and provide guidance to help avoid "greenwashing" claims. Visit us on Public Tour Days (see calendar) or e-mail hope.breidenbach@mobot.org.

Young Green Builders

Camp EarthWays: Young Green Builders

Monday-Friday, July 7–11, 9 a.m. to 3 p.m.
What would your child imagine if they envisioned a fantasy green home? During this week-long experience, campers will explore sustainable home design from the inside out and visit sustainable homes and urban farms, navigating public transportation. Campers will present their own home designs at an open house event.
For children entering grades 5–8.
Fee: $175 ($150 Garden members).
Call (314) 577-0200.

photo by Kevin Wolf

The Crescent Knoll Overlook affords views of the Meramec River Valley. It is wheelchair accessible from the Maritz Trail House.

A Growing Partnership!

The Missouri Department of Conservation (MDC) and the Shaw Nature Reserve have reinforced their commitment to conservation by agreeing to expand education and outreach programs at the Reserve. The partnership, now in its fifth year, offers greater opportunities for native plant promotion, families in nature, and youth education initiatives. The complimentary missions of the Reserve and MDC have resulted in a variety of successful collaborative projects over the years. A bi-annual Prairie Day event, the Master Naturalist program, Missouri's Outdoor Women weekend, First Time Fishing for Kids, Native Plant Conference, and Grow Native! publications and outreach are among the most recent. Other Shaw Nature Reserve educational programs include a Native Plant School series in the wildflower garden; early childhood classes, summer camp, and school field trips.

Members' Day:
Shaw Nature Reserve

Wednesday, April 23, 9 a.m. and 1 p.m.
Whitmire Wildflower Garden
Enjoy a docent-led walking tour of the Whitmire Wildflower Garden during the peak of spring. Tours offered at 9 a.m. and 1 p.m.

Spring Wildflower Sale

Saturday, May 10, 9 a.m. to 4 p.m.
Select from a huge variety of showy and hardy native plants, trees, and shrubs for home landscaping in sun or shade, including many that attract birds and butterflies. All plants are nursery propagated (i.e., not wild-harvested).

Members' Preview Sale

Friday, May 9, 4 to 7:30 p.m.
Garden members enjoy early-bird privileges with a special preview sale.

SHAW NATURE RESERVE

Hwy. 100 & 44 (exit 253), Gray Summit, MO 63039
phone: (636) 451-3512 • www.shawnature.org

Native Plant School

Sign up now for one or several of these mostly outdoor learning sessions in the Whitmire Wildflower Garden. Classes cover many aspects of native plant gardening and landscaping for residential, municipal, and commercial properties. All classes take place on Thursdays, 1 to 4 p.m. Fee: $12 ($8 for Garden members). Call (636) 451-3512 to reserve your spot.

April 10	Shade Gardening
April 24	Spring-blooming Native Perennials
May 8	Common Garden Weeds: Control and ID
June 12	Rain Gardening and Storm Water Runoff

Featured Native Plant

Wild Sweet William
Phlox divaricata

A favorite woodland perennial, this low-growing phlox shows off its sky-blue flowers in April and May, providing a delicate fragrance that fills the air. It is pollinated by bumblebees and swallowtail butterflies. Easy to grow in shady locations and organic soils, Wild Sweet William will be available at the Spring Wildflower Sale.

Young children experience nature in the Butterfly House tropical Conservatory. The outdoor gardens attract local and migrating species.

Buzz: Butterfly Gardening

Saturday, April 12, 10 to 11:30 a.m., ages 6 and up

Spring is in the air and soon native butterflies will be making their appearance outdoors. Butterflies need more than just the nectar from flowers in order to survive. Children six and up will design a butterfly garden, learn about the butterfly life cycle, and take home a container planting. The class is $18 ($16 for Garden members). Children must be accompanied by an adult, and the fee covers one child and one adult. Class size is limited to 20 participants. Reservations are required, so call (636) 530-0076 x10.

Bed Bugs

Once a week in April, 6:30 to 7:30 p.m.
Bring the kids for a quiet evening stroll through the butterfly conservatory, followed by a critter craft, snack, and bedtime story. For four to eight-year-olds with an adult. $20 includes one child and one adult ($18 for Garden members); additional family members $5 each. Dates: Tuesday, April 1, Wednesday, April 9; Thursday, April 17; and Friday, April 25. Reservations required, call (636) 733-2339.

Buggin' Out for Earth Day

Saturday, April 19, 11 a.m. to 2 p.m.
One person's trash is another person's craft project! Bring your kids (ages 3–10) to the Butterfly House for earth-friendly crafts and activities. Activities free with regular admission.

Mother's Day Brunch Buffet

Sunday, May 11, 11 a.m. to 2 p.m.
Join us for a bountiful buffet served on the Emerson Lakeside Terrace. Prepaid, nonrefundable reservations are required and begin Wednesday, April 16. For price and to reserve, call (636) 733-2339.

Father's Day Splash and Spray

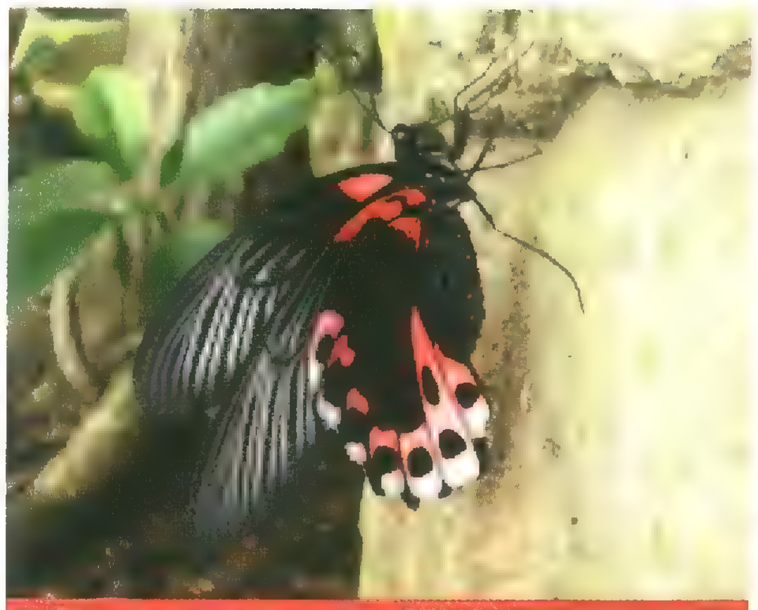
Sunday, June 15, 11 a.m. to 2 p.m.
Challenge Dad to some squeaky clean fun. These water activities will be certain to make your Dad the coolest on the block. Designed for Dads (but any adult will do) with children ages 3 to 8. Activities free with regular admission.

Butterfly House

15193 Olive Blvd., Chesterfield, MO 63017
(636) 530-0076 • www.butterflyhouse.org

Summer Camp: Backyard Science

Monday, June 23–Friday, June 27
9 a.m. to 3 p.m.
Do you know what's living in your backyard? Join us as we investigate some plants and explore the critters living around them. For children entering grades 1–6. Fee: $175 ($150 for Garden members). Call (636) 530-0076 x13.



FEATURED FRIEND

Scarlett mormon
Papilio rumanzovia

Range: Southeast Asia
Host plants: *Rutaceae* (Citrus family)

This blood-red-accented butterfly is very large, with wings measuring up to 5½ inches. Males are a deep velvety black with areas of scarlet on fore and hindwings. Females also display areas of scarlet, but tend to be more subdued in coloration. Both feed only on the nectar of flowers.

Tributes

November 2007 through January 2008

A tribute gift to the Garden is a wonderful way to honor family and friends. Tributes of $25 and up are listed in the *Bulletin*. If you have questions regarding giving opportunities at the Garden, please call (314) 577-5118. You can also make a tribute gift online at our website, www.mobot.org.

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Mrs. Kelly Walsh and Mr. Brett Davidson

Mr. and Mrs. Doyle Wilhite
Sue Madden and Irene Lott

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Bull Moose Tube Company

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Mr. Barry Krantz

Agnes Adams
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Mrs. Marilyn Barnhart
Mrs. Shirley G. Durfee
Mrs. Barbara Huning
Missouri Botanical Garden Docents

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Mrs. Helen Harvey

Mrs. Barbara Hankins
Mrs. Betty J. Argust
Mr. and Mrs. Donald R. Hemmer

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Mrs. Helen Harvey
Dr. and Mrs. S. N. Bodapati

Mrs. William C. Heidbrink's mother
Mr. and Mrs. Stephen C. Smith

Mrs. Phyllis L. Hellyar
Ms. Patricia A. Campbell
Glendale Gardners Condo Association
Mr. and Mrs. Charles M. Kozieczny

Mr. Steven Joseph Helms
Ms. Bettye L. Sakaguchi

Mr. David A. Hicks
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Mr. H. James Hoeferlin

Mrs. Wilma Hockett
Ms. Marcia Amm

Mr. Joseph G. Hoffmann
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Mr. and Mrs. J. Hugh Rogers

Mrs. Clarisse C. Hopkins
Ms. Betty C. Mathias
Mr. and Mrs. Mitchell R. Stumpf
Ms. Jill A. Young

Dr. Helen Gray Ice
Mrs. Antoinette C. Breihan
Mrs. Seymour Brown
Ms. M. S. Courtney
Ms. Kathleen M. Desloge
Mr. and Mrs. Taylor S. Desloge
Ms. L. Anne H. Dishman
Dr. and Mrs. Edward K. Du Vivier
Dr. and Mrs. Maurice J. Lonsway, Jr.

Mrs. Margaret Johnson
Dr. Elizabeth F. Grodsky

Francisca V. Johnston
National Personnel Record Center

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Ms. Thelma D. Kinzel
Ms. Nancy S. Swoboda

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Mrs. May Kourik
Mr. and Mrs. James W. Shucart

Mrs. Alice Carow Kratzman
Ms. Teresa A. Donnelly

Roger Warren Krueger, Ph.D.
Mr. and Mrs. Bruce S. Dole

Masako Kunimoto's mother
Ms. Phyllis A. Gillis

Mrs. Bliss Morfit Lewis
Anonymous
Mr. and Mrs. M. Erwin Bry, Jr.
Mrs. Jane D. Bryan
Mr. and Mrs. William H.T. Bush
Mr. and Mrs. Robert R. Cave
Mrs. Marjorie Dozier
Mr. and Mrs. J. Curtis Engler
Garden Club of St. Louis
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Mr. and Mrs. J. Joseph Horan, Sr.
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Mr. and Mrs. Daryl McQuinn
Mrs. H. Leighton Morrill
Dr. and Mrs. Stephen L. Post
Leigh F. Pratter
Mr. and Mrs. John C. Rogers
Warren and Jane Shapleigh
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Mr. and Mrs. Eric R. Weidmann

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Mr. Edwin Pfaff
Mr. and Mrs. Roger H. Volk

Mrs. Esther Jean Phillips
Mrs. Ray M. Allen

Grandfather of David Phillips
Dr. and Mrs. Fredric M. Simowitz

Mrs. Estelle Pinkus Rubin
Mrs. Alice G. Kerckhoff

Mr. Angelo Ruggeri
Mrs. Mary E. Hoffmann

Mrs. Barbara Scharnhorst
Mr. and Mrs. David E. Morgan

Mr. Kermit Schlamb
Old Bonhomme Elementary
Mr. Howard Nathanson and Ms. Sarah Anne Patz
Mr. and Mrs. Stephen C. Smith

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Mr. and Mrs. John J. Donnelly

Roy and Janita Schoening
Mr. and Mrs. William Schoening
Mr. and Mrs. Peter Stern

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Ms. Rebecca Dorn
Ms. Alyssa A. Dudkowski
Mr. and Mrs. Robert J. Gaddy
Dr. and Mrs. William A. Kamm
Real Estate Analysts Limited
Family of Clarence "Bud" Streck
Mrs. Gwyneth E. Thomas
Mr. John A. Vassen

Mr. Don F. Seyferth
Mr. and Mrs. Leo P. Cremins, Jr.
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Dr. John S. Skinner
Mr. Howard J. Wilkinson, Jr.

Dr. Margaret W. Skinner
Chris Bertrand
Ms. Barbara A. Bohne
Mr. Michael A. Esch

Mrs. Estalee Smith
Ms. Carol A. Gruen

Dorothy Solovic
Mr. and Mrs. George J. Solovic

Mr. C. C. Johnson Spink
Deborah Taylor Sweeney

Mrs. Helene Stehlin
Mr. and Mrs. Harold F. Helmkampf

Joan Staley Stevens
Cornelius H. Darcy

Ann E. Taenaka
Ms. Sandra L. Ritter
Mrs. Janet Susuki

Mrs. Joan L. Timmerman
Mr. Marc Adams
Carlson co-workers
Mrs. Joan E. Nodland
Mrs. Sharon L. Reynolds
Mr. Jody Timmerman

Mrs. Mildred M. Vietmeier
Mrs. Betty A. Melby

Mr. Raymond W. Vodicka
Rutherford Family
Marianne, Steven, Mark, Karen, and Jim

Mrs. Catharine H. von Brecht
Ms. Lois Vander Waerdt

Mr. George Wallace
Ms. Mary E. Long

Mr. Charles R. Ward
Mr. and Mrs. Ralph F. Korte

Mr. John C. Warden
Ms. Wendy Williams

Mrs. Betty Wheatley
Ms. Suzanne Bosch
St. Louis Star Quilt Guild

Mrs. J.R. Wollenberg
Anonymous

Mrs. Mitsuyo Yagi
Mr. and Mrs. Harold I. Mosinger

Mrs. Dorothy Zubek
Dr. and Mrs. Dennis M. Anghm

Members' Entry Court

Bricks from November 2007–January 2008.

Engraved clay bricks and signature bronze bricks are a wonderful way to commemorate any special occasion, as well as final memorials. For additional information regarding the Garden's brick program, please contact the Institutional Advancement Office at (314) 577-0874 or visit www.mobot.org.

Signature Bronze Bricks

Audrey D. Allen
Horace S. Allen
Mr. Dennis J. Allen

David and Kathleen Broughton
Mr. and Mrs. David L. Broughton

Carol and Frank Flotken
Mr. and Mrs. Bryan Babitz
Mr. and Mrs. John Flotken
Mr. and Mrs. Michael Flotken
Mr. and Mrs. Paul E. Flotken

Jack and Jackie Mitchell
Mr. and Mrs. John F. Mitchell

Jack Jennings, Photographer
Ms. Jane M. Corbett
Mrs. Eleanor K. Jennings
Mr. and Mrs. Dick James
Mr. and Mrs. William P. Jennings
Mr. and Mrs. Garry E. Moeller

Mr. and Mrs. Kenneth C. Sadler
Mr. and Mrs. Kenneth C. Sadler

Nancy E. Waites
Mr. Robert R. Waites

Engraved Clay Bricks

Harry and Jan Amann
Mr. and Mrs. Michael A. Amann
Mr. and Mrs. Christian A. Miller

Mary B. Elbert
Mr. Henry Elbert
Mr. and Mrs. Charles S. Elbert
Mr. and Mrs. Randy J. Tankersley

Rubenstein Parker Family
Chris, Stewart, David, Brian
Mr. and Mrs. Charles W. Parker

Russ and Pat Ohmer Family
Mrs. Patricia Ohmer

Rich Griffith and Ray Griffith
Ms. Julie Griffith

David and Jackie Gunn
George Engle, Jr.
Michael Olliges
Dr. Ralph Olliges

Zachary Pazur and Ann Bogardus
Frederick Westermayer, Jr.
Mr. and Mrs. Fred Westermayer

Michael M. Miklas
Mrs. Lucille K. Miklas

Margaret M. Roman
Dr. Christine Roman

Margo Skinner
Ms. Barbara A. Bohne

Linda Clark and Vicki Staples
Ms. Vicki L. Staples

Jean M. Yemm and Gale N. Yemm
Mr. Robert McCreary and Ms. Nancy Garbero
Mr. Thomas Yemm

photo by Kevin Wolf

Sophia M. Sachs
Butterfly House Tributes & Pavers

To learn more about these opportunities, call (314) 577-0291 or www.butterflyhouse.org.

Tributes and Pavers dedicated at the Sophia M. Sachs Butterfly House in November 2007 through January 2008.

Tributes

In Honor of

Mrs. Maxine P. Bromberg
Mr. and Mrs. Harold A. Patterson

Mr. and Mrs. Joseph F. Shaughnessy
Mr. and Mrs. Harold F. Sher

In Memory of

Mrs. Mildred Krebeck
Mr. Kent W. Krebeck

Carson Lee Mann
Mr. Phil Galante

Elizabeth Clare Meuret
Mr. Steve Arendt
Mr. and Mrs. Michael W. Cossins
Mrs. Gretchen L. Floresca
Mr. and Mrs. Daniel E. Glidewell
Mr. and Mrs. Steven L. Goldenberg
Mr. and Mrs. Michael Lissner
Mach 5 Forum

Mrs. Sue Schroeder
Mrs. Patricia A. Alvarez
Mr. and Mrs. Craig W. Ashmore
Ms. Angela S. Ballantyne
Mr. and Mrs. Thomas M. Bourke
Mr. and Mrs. William B. Dawson
Mr. and Mrs. Dean Denardi
Mr. and Mrs. Thomas S. Dickerson
Mr. Mark E. Digman
Ms. Laura H. Filmore
Ms. Stacy M. Fogerty
Mr. and Mrs. Charles T. Forrest
Mr. and Mrs. Gary G. Gagstetter
Mr. and Mrs. Jason D. Glidden
Mr. and Mrs. Richard C. Goldman
Mr. and Mrs. Charles R. Harris
Mr. and Mrs. J. Marcus Heim
Mrs. M. L. Knickerbocker
Ms. Barbara Ann Kovach
Mr. and Mrs. James D. Lathrop
Mr. and Mrs. Robert M. Laurence
Mr. and Mrs. Brian K. Leduc
Ms. Etty Masoumy
Mr. and Mrs. Kenneth Michaelsen
Dr. and Mrs. Jai P. Nagarkatti
Mr. and Mrs. James J. Olsen
Mrs. Suzanne Queensen and Mr. Roger K. Nolting
Veena Ray and Debabrata Ray
Mr. Michael G. Rehme
Mr. and Mrs. Phillip J. Roth
Mr. and Mrs. Bernard H. Scheer
Mr. and Mrs. Daniel J. Slenker
Dr. and Mrs. Joseph P. Slimack
Mr. and Mrs. David A. Smith
Dr. and Mrs. James G. Stewart
Mr. and Mrs. Jerome G. Ullman
Mr. and Mrs. Edward F. Vierling
Mr. and Mrs. Robert S. Wachter
Mr. and Mrs. Randy D. Wedel
Dr. and Mrs. Ken Yamaguchi

Pavers

Amber Lynn Andell
Mr. and Mrs. Douglas Adams

Annaliese G. and Thomas E. Briggs
Mr. and Mrs. Michael Stanberry

Helen Fahey Comerford
Ms. Joan M. O'Malley

Grandma June
Mr. Michael Gruhala
Mr. John Gruhala

Joe and Sandra Hoffmann Family
Drs. Joseph and Sandra Hoffmann

Adam Howes
Ms. Haley Clausen

Dr. Daniel E. and Muriel H. Nathan
Dr. Jaime M. Dodd

C and G Nill
Mrs. Denise Kniepman

Mary Fahey O'Malley
Ms. Joan M. O'Malley

Emma Powers
Mr. and Mrs. Ryan Roberts

Len and Carole Ritter Family
Mr. and Mrs. Len Ritter

Dennis Silverstein
Mr. and Mrs. Douglas Adams

Mollie Stein
Mr. Thomas G. Hartmann

photo by Heather Osborn

Employee Spotlight: Darman Williams

In 2008, Darman Williams, outdoor horticulturist II, celebrates 30 years at the Garden. When asked how the Garden has changed in three decades, he quips, "We used to shovel snow by hand. Today we have plows, blowers, and bobcats with brushes." Williams oversees the Hosta Garden, the Scented Garden, and the supremely right-angled hedges along the Linnean House. His secret to achieving such a fine effect? "Time and patience." He enjoys planning the beds outside Spink Pavilion along Tower Grove Avenue, which are seen by so many people. This year's display promises a color scheme of rich burgundy and smoky gray. At home in the Carondelet/Holly Hills neighborhood where he lives with his wife, Williams maintains two perennial borders with something "always in bloom." He has two children and one grandson. What kept him at the Garden all these years? "Seeing the seasons change, the beauty of the Garden—I never get bored!"

Create a legacy

By leaving a bequest to the Garden, you create a legacy that will benefit others for generations to come. If you have already included the Garden in your estate plans, we hope that you will share this information with us. We would like to express our gratitude and welcome you into the Heritage Society. Of course, your wishes for anonymity are respected. Please call (314) 577-9495 for further information, or visit our website at www.mobot.org. Click on Donate, then Planned Giving.

Membership...a Great Gift

Looking for a special gift this year? Surprise Mom or Dad with a Gift Membership to the Garden. If you purchase a gift membership for Mother's Day through May 11, or for Father's Day through June 15, you'll receive an extra gift: your choice of two Wehrenberg movie passes or a Waterway Gas and Wash "Whole Thing" gift certificate while supplies last. No matter which extra gift you choose, all gift memberships will be entered into a drawing for a Waterway "Clean Car Club" membership, which provides unlimited carwashes all year long and discounts on gasoline. Show Mom and Dad how much they mean to you by giving them the gift of the Garden.

Offer applies to on-site membership sales only, while supplies last. Stop by the Membership Services Desk in Ridgway Center to purchase your gift membership. For more details, please call (314) 577-5118.

April Events

Visit www.mobot.org for the latest information.

Niki!

Sunday, April 27 to Thursday, October 31 ☺

The passionate pop art of *Niki* opens April 27. Already, "Le Poète et sa muse" graces the façade of the Ridgway Visitor Center. The remaining 39 colorful mosaic sculptures will be installed this month. This is the first Niki de Saint Phalle exhibition in St. Louis. Children are encouraged to touch, sit on, and climb many of the works. Before you visit, download the free audio tour to your mp3 player at www.mobot.org.

Exhibit sponsored by: Anheuser-Busch Companies, Jinny and Larry Browning, Macy's, Monsanto, Sachs Properties, and anonymous (a dedicated volunteer).

photo by Heather Osborn

Niki Nights | *Thursdays, May through September, 5 to 9 p.m.*
Enjoy cool evenings, colorful sculptures, and family fun with casual outdoor dining and special treats for children and adults. The Doris I. Schnuck Children's Garden is included FREE with admission until dusk. Admission: adults $7, Garden members $5, and children (12 and under) $3.

Members' Day: Niki Presentation and Book Signing ✿

Sunday, April 27, 3 p.m., Shoenberg Theater
Garden members will have an opportunity to get an in-depth look at the work of artist Niki de Saint Phalle during this special presentation on opening day. Book signing by Niki's daughter Laura Gabriela follows.

Volunteers are still sought to serve as Niki hosts every day of the week. For details, call (314) 577-5187 or e-mail jackie.juras@mobot.org.

Blaze a Trail to the Children's Garden ☺

Saturday, April 5, 10 a.m. to 3 p.m.
Join us for the Children's Garden season opener as we pretend to blaze a trail like Daniel Boone on a Missouri adventure. Grab your map at the Ridgway Center and hit the trail. Make a craft and collect frontier supplies. Enjoy some tasty pioneer treats and visit the General Store to trade with the merchant for a fun surprise.

Arbor Day

Friday, April 4, Center for Home Gardening
To celebrate Missouri Arbor Day, the Garden will give away 300 saplings, one per person, while supplies last. Species this year include: Shumard oak (*Quercus shumardii*), Bald cypress (*Taxodium distichum*), and Blackgum (*Nyssa sylvatica*). Master gardeners will be on hand to answer questions.

From the Garden, Live

Sundays, April 6–27, noon, Shoenberg Theater
Classic 99's free concert series. Tickets required, www.classic99.com/pgarden.htm

Members: Explore Mexico ✿

Tuesday, April 8, 11 a.m., Shoenberg Theater
Join Garden curator Dr. George Yatskievych as he discusses his discovery of a rare, undescribed genus of parasitic flowering plants in Guerrero, Mexico.

Herb Days

Wednesday–Saturday, April 16–19, 9 a.m. to 5 p.m., Ridgway Center
At the St. Louis Herb Society's sixth annual event, choose from a huge selection of potted fresh herbs as well as edibles, gifts, and more. Society members give demonstrations and guidance on planting, growing, and using herbs.

Science Café

Thursday, April 17, 6:30 p.m, Spink Pavilion
"Climate Change, Tibetan Alpine Plants and People" by Dr. Jan Salick. $20 ($15 for Garden or Science Center members). Reservations: (314) 289-4424.

☺ = fun for families
✿ = members' event

Earth Day

Saturday, April 19, 10 a.m. to 3 p.m., Garden grounds
Participate in a healthy future for the planet with Earth Share Missouri. Garden staff will lead behind-the-scenes tours of the greenhouses at 10 a.m., noon, and 2 p.m. Enjoy the bluegrass music of The Barn Burners from 1 to 3 p.m.

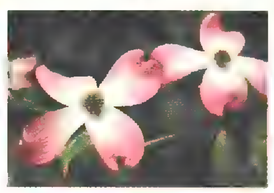
April 2008

average temperature: 56.6
average monthly precipitation: 3.69 in.

What's in bloom: download the podcast at www.gardenhelp.org

bluebells

tulips


dogwood

azalea/rhododenron

Jacob's ladder

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Children's Garden now open Don't miss the grand re-opening event April 5. See p. 19.	01 *The Garden at Night*, photo exhibit through May 18 Plastic Pot Recycling. See p. 4. Bed Bugs $☎ BH	02 AARP Celebration of Life	03	04 Arbor Day tree giveaway KC	05 Blaze a Trail to the Children's Garden $ Orchid Society of Greater St. Louis show and sale Craft Saturday BH
06 Orchid Society of Greater St. Louis show and sale From the Garden, Live®	07	08 Members' Day: Explore Mexico 11 a.m. ST	09 Bed Bugs $☎ BH	10 Nature Plant School $☎ SNR	11	12 BUZZ: Butterfly Gardening $☎ BH Mid-American Regional Lily Society sale
13 Mid-American Regional Lily Society sale From the Garden, Live®	14	15	16 St. Louis Herb Society Herb Days GGS Herbaria trunk show GGS	17 St. Louis Herb Society Herb Days GGS Science Café: "Climate Change in Tibet" $☎ SP Bed Bugs $☎ BH Herbaria trunk show GGS	18 St. Louis Herb Society Herb Days GGS "Web of Life in Amber," 2008 John Dwyer Biology Lecture, 4 p.m. ST Herbaria trunk show GGS	19 Earth Day St. Louis Herb Society Herb Days GGS Booksigning with Becky Homan, 10 a.m. to 1 p.m. Herbaria trunk show GGS Buggin' Out for Earth Day BH Public tours EWC
20 Passover From the Garden, Live® Herbaria trunk show GGS Public tours EWC	21	22 Earth Day	23 Members' Day: Whitmire Wildflower Garden SNR. See p. 21.	24 Dr. Mark Webb presents "Behind Scenes: Kings Park Botanic Garden, Australia" 4 p.m. ST	25 Bed Bugs $☎ BH	26 Big Spring Book Signing, Dr. Peter Bernhardt, Dr. George Yatskievych, and Don Kurz. Noon to 2 pm. GGS
27 *Niki* exhibition opens. Members' Day: *Niki* Presentation 3 p.m. ST From the Garden, Live®	28	29	30			

Key *(All events take place at the Garden unless otherwise noted.)*

CA = Cohen amphitheater
CL = Climatron lawn
GGS = Garden Gate Shop in RC
JE = Jordan Education Wing in RC
KC = Kemper Center for Home Gardening
SP = Spink Pavilion
RC = Ridgway Center
SS = Sassafras, the Garden's café in RC
ST = Shoenberg Theater in RC

Off-site locations:
BH = Butterfly House, (636) 530-0076
EWC = EarthWays Center, (314) 577-0220
LS = Little Shop Around the Corner, (314) 577-0891
SNR = Shaw Nature Reserve, (636) 451-3512

Members-only event
☎ Reservations required
$ Fee

photos by Jack Jennings, Cindy Lancaster, Brian Mueller, John Smelser, and Erin Whitson.

May Events

photo by Leslie Wallace

Chinese Culture Days

Dancers and Dragons, Tea and T'ai Chi

Saturday–Sunday, May 17–18, 10 a.m. to 5 p.m. ☺

The Garden's annual celebration of Chinese arts, culture, and cuisine—Chinese Culture Days—welcomes the daring feats of the New Shanghai Acrobatic Circus to center stage. The event kicks off with the Grand Parade at 10 a.m. Saturday with a colorful 70-foot dancing dragon followed by martial artists and lion dancers. Try t'ai chi, taste tea, and learn about our own Chinese garden in this lucky Year of the Rat (*shu*) in the Chinese zodiac. Admission is $10 for the general public; $3 for Garden members. Download the complete schedule of events from the Garden's website: www.mobot.org.

Visit www.mobot.org for the latest information.

Flower Festival at Christ Church Cathedral

Saturday–Sunday, May 3–4, 1210 Locust St.

Henry Shaw's endowed annual sermon on "the wisdom and goodness of God as shown in the growth of flowers, fruits and other products of the vegetable kingdom." Services at 11 a.m.; street fair. Visit www.christchurchcathedral.us.

New Member Orientation ✿

Saturday, May 3, noon, Shoenberg Theater

Learn about events, discounts, classes, and receive free passes. Participants receive Bonus Bloom passes and discounts in Sassafras and the Garden Gate Shop. Bring your friends who are interested in membership too!

Garden as Protector of the Planet

Tuesday, May 6, 6 p.m., Shoenberg Theater

The Missouri Botanical Garden is featured in this television show, which is part of the *GardenStory* series to air on PBS stations. The series depicts the power of gardens to transform lives and strengthen communities. Generously sponsored by Bunge and Robert and Signa Hermann, the episode airs locally on KETC/Channel 9. See it here first, when series creator and host, Rebecca Frischkorn, presents.

Annual Greenhouse Plant Sale

Thursday, May 8, 9 a.m. to 4 p.m.
Greenhouse complex

The Horticulture Department's annual sale features many interesting and unusual perennials, tropicals, ferns, and woody plants, as well as overruns of annuals grown for Garden grounds. Cash, check or MasterCard/Visa accepted; no discounts given. All proceeds benefit the Garden.

Illinois Appreciation Week

Sunday–Saturday, May 25–31

Invite your friends from the Metro East who may not yet be members to experience the joys of the Garden during our seventh annual Illinois Appreciation Week. Illinois residents receive two-for-one admission, a 10 percent discount in the Garden Gate Shop, and 20 percent off new or gift memberships.

Garden Party at Eckert's

Thursday, May 22, 5:30 to 8 p.m.,
951 S. Green Mount Rd. in Belleville, IL

An evening of wine tasting, refreshments, and gardening demonstrations by experts to benefit the Garden's Illinois outreach. $15 per person ($10 for Garden members). Reserve your place by calling (314) 577-0291.

Rose Evening/ Brick Donor Reception ✿

Wednesday, May 28, 5:30 to 8 p.m.

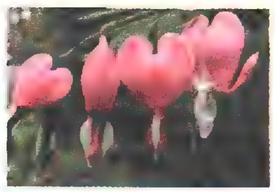
Enjoy an evening stroll through the Garden's fabulous rose gardens during peak bloom. Enjoy music, cash bar, attendance prizes, and everyone takes home a long-stemmed rose as a souvenir (while supplies last). Brick donors are invited to attend Rose Evening and view their tribute bricks at the William T. Kemper Center for Home Gardening.

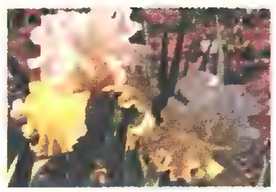
☺ = fun for families
✿ = members' event

May 2008

average temperature: 66.55
average monthly precipitation: 4.11 in.

columbine


bleeding heart


iris

peony

rose

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				01 niki Nights $	02	03 New Member Orientation noon, ST Flower Festival at Christ Church Cathedral Greater St. Louis Iris Society show St. Louis Horticultural Society and Hosta sale
04 Flower Festival at Christ Church Cathedral	05	06 PBS documentary *Garden Story* 6 p.m., ST	07	08 Greenhouse Plant sale Nature Plant School $☎ SNR niki Nights $	09 Members' Preview: Spring Wildflower Sale SNR See p. 21	10 Spring Wildflower Sale SNR See p. 21
11 MOTHER'S DAY Greater St. Louis Dahlia Society sale, 12–5 p.m. Mother's Day brunch at Sassafras $☎ Mother's Day brunch buffet $☎ BH	 *Mother's Day Brunch* *Sunday, May 11, Sassafras;* *Seatings at 10 a.m., 11:30 a.m., and 1 p.m.* $24.95 per adult, $11.95 per child age 12 and under (tax not included). Reservations required: (314) 577-9530.		14	15 niki Nights $	16	17 Chinese Culture Days $ Public tours EWC
18 Chinese Culture Days $ Public tours EWC	19	20	21	22 Garden Party benefit at Eckert's $☎ niki Nights $	23 *Seasons of the Heartland*, photo exhibit, through Aug. 17	24 "Exploring Trees Inside and Out" See p. 19. Rose Society of Greater St. Louis show and sale
25 Illinois Appreciation Week	26 MEMORIAL DAY Illinois Appreciation Week	27 Illinois Appreciation Week	28 Illinois Appreciation Week Rose Evening/Brick Donor Reception 5:30 to 8 p.m. Garden open until 8 p.m.	29 Illinois Appreciation Week niki Nights $	30 Illinois Appreciation Week	31 Illinois Appreciation Week American Rock Garden Society sale Bonsai Society of Greater St. Louis show and sale Plants of Merit™ show and sale. Lecture: 11 a.m. and 1 p.m., Linnean Plaza

photos by Cindy Lancaster, Brian Mueller, Leslie Wallace, and Kevin Wolf.

June Events

Visit www.mobot.org for the latest information.

photo by Leslie Wallace

Whitaker Music Festival

Warm Breezes, Hot Jazz, Cool Tunes ☺

Wednesdays, June 4–August 13, 7:30 p.m. (free admission after 5 p.m.)
The Whitaker Music Festival returns for a 14th season with free Wednesday-night concerts. Arrive early to enjoy the flowers in bloom and see *Niki*, the whimsical mosaic sculptures by artist Niki de Saint Phalle. The Children's Garden is free on Whitaker Wednesdays from 5 to 7 p.m. Picnicking is allowed on these nights, so concertgoers are invited to bring lawn chairs, blankets, and picnic suppers to enjoy. Food and drink may also be purchased. The festival leads off with Jazz in June—Erin Bode, Two Times True, Le Jazz Hot!, and the Tony Simmons Band. Download the complete schedule of performers from the Garden's website: www.mobot.org.

The festival is funded by the Whitaker Foundation, which supports St. Louis arts and parks to promote common heritage, celebrate diversity, and encourage vitality within the community.

Plants of Merit™ Show and Sale

Saturday–Sunday, May 31–June 1, Linnean Plaza
Plants of Merit will be on display along with other splendid but underutilized varieties. Plants of Merit were created to teach gardeners about exceptional and environmentally friendly plants for the home landscape. Over 50 superior performing plants are chosen each year. Learn more during lectures at 11 a.m. and 1 p.m. both days. *Sponsored by Sugar Creek Gardens.*

St. Louis Garden Tour 2008

Sunday, June 8, 10 a.m. to 4:30 p.m., rain or shine
Every three years, the Missouri Botanical Garden hosts a garden tour of private homes. See back cover for more information.

Members: Botanicals and Cancer

Tuesday, June 17, 6 p.m., Shoenberg Theater
During Cancer Awareness Month, Dr. Wendy Applequist, the Garden's assistant curator of economic botany, presents the important role that plants play in cancer treatment. Following the lecture, tours of the Climatron will introduce some of our tropical plants with recorded medicinal properties.

Young Friends' Wine Tasting

Wednesday, June 18, 6 to 8 p.m., Butterfly House
Sample the best vintages of Mount Pleasant Winery with other young professionals in the beautiful backdrop of the Sophia M. Sachs Butterfly House. $20 ($15 for Garden members). Visit www.mobot.org/membership or call (314) 577-9432 for reservations.

Members' Musical Evening

Friday, June 20, 5:30 to 8:30 p.m., Spoehrer Plaza
Bring a picnic supper, your lawn chairs and blankets, and enjoy a night of big band music under the stars. Dance the night away with the swinging sounds of the Gateway City Big Band. Limited seating available on a first come, first served basis.

A Midsummer Night's Dance

Sunday, June 22, 6 to 9 p.m., Spoehrer Plaza
If you enjoyed the Valentine Dinner Dance, you will love this romantic outdoor evening in the Garden. Enjoy live entertainment and dancing, dinner buffet and cash bar. $70. Visit www.mobot.org/membership or call (314) 577-9570 for reservations.

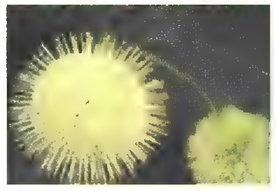
Members' Family Picnic ☺

Friday, July 11, 6 to 9 p.m., Cohen Amphitheater and Children's Garden
Last year's inaugural Members' Family Picnic was a huge success, so mark your calendars and bring a picnic supper. Activities include face painting, games, crafts, and more! Visit www.mobot.org/membership or call (314) 577-9570 for reservations.

☺ = fun for families
= members' event

June 2008

average temperature: 75.6°
average monthly precipitation: 3.76 in.


buttonbush

clematis

daisy

lily

sacred lotus

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01 Bonsai Society of Greater St. Louis show and sale Plants of Merit™ show and sale. Lecture: 11 a.m. and 1 p.m.	02 Butterfly School Academy $☎ BH	03	04 whitaker MUSIC FESTIVAL *Erin Bode* 7:30 p.m. Butterfly School Academy $☎ BH	05 Butterfly School Academy $☎ BH niki Nights $	06 Butterfly School Academy $☎ BH	07 St. Louis Carnivorous Plant Society show and sale Mid-American Regional Lily Society show
08 St. Louis Garden Tour 2008 $☎ Mid-American Regional Lily Society show Camp Bugaloo $☎ BH	09	10	11 whitaker MUSIC FESTIVAL *Two Times True* 7:30 p.m. Butterfly School Academy $☎ BH	12 Nature Plant School $☎ SNR niki Nights $	13 Celebrate the Victorian District completion! See website for details. Camp Bugaloo $☎ BH	14 Flag Day Metropolitan St. Louis African Violet Council show and sale
15 Father's Day Metropolitan St. Louis African Violet Council show and sale Father's Day Splash and Spray BH	16	17 Members' Day: Botanicals and Cancer ST	18 Young Friends: Wine Tasting $☎ BH whitaker MUSIC FESTIVAL *Le Jazz Hot!* 7:30 p.m.	19 niki Nights $	20 Members' Musical Evening	21 West County Daylily Club sale Public tours EWC
22 A Midsummer Night's Dance $☎ Public tours EWC	23 Backyard Science $☎ BH	24 Backyard Science $☎ BH	25 whitaker MUSIC FESTIVAL *Tony Simmons Band* 7:30 p.m. Backyard Science $☎ BH	26 Backyard Science $☎ BH niki Nights $	27 Backyard Science $☎ BH	28
29	30					

Missouri Botanical Garden Library
3 1753 00349 4306

photos by Brian Mueller, John Smelser, Leslie Wallace, and www.gardeninghelp.org.

Worried about highway construction?
The Garden is...

conveniently located off INTERSTATE 44

For latest directions, visit www.mobot.org.

General information

Hours

The Garden is open every day except December 25, 9 a.m. to 5 p.m. Parking is free.

General admission*

Adults age 13–64 ..... $8
Members and children 12 and under .... free

St. Louis City and County visitors, with proof of residency, receive a discount on admission and free admittance on Wednesday and Saturday mornings until noon (unless special event pricing applies).

**Special events require an additional fee.*

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24-Hour Event Hotline ..... (314) 577-9400

Off-site locations

Butterfly House ..... (636) 530-0076
EarthWays Center ..... (314) 577-0220
Shaw Nature Reserve ..... (636) 451-3512

St. Louis Garden Tour 2008

Sunday, June 8, 10 a.m. to 4:30 p.m., rain or shine

Every three years, the Missouri Botanical Garden hosts a garden tour of private homes. This summer, members and their guests are invited to tour nine of the loveliest private gardens in St. Louis. Watch the mail for your invitation. Tickets, including bus transportation and box lunch, are $75. (Buses board between 9:15 and 9:45 a.m. at the Ridgway Center.) Self-guided tour tickets are $50. Reservations required. Please call (314) 577-9570 or visit www.mobot.org.

Sponsors: *Gringo Jones, Allen Irrigation and Lawn Care, Bayer's Garden Shop, Trees, Forests and Landscapes, The Bug Store, Gamma's Sheild Shade Tree, Inc., Gamma Tree Service, Garden Heights Nursery, Garden Savvy, St. Louis Orthopedic Institute, Sugar Creek Gardens, and Zick's Great Outdoors Nursery and Landscape Company*

Friends of the Garden Tour: *Mr. and Mrs. Arnie Robbins, Dr. and Mrs. Joe Williamson, Terry and Roger Beachy, Ann and Steve Bowen, Ann Case, Linda and Steve Finerty, Sheila and Jim Hoffmeister, Laure and Jim Hullverson, Paula and Joe Lampen, Isabelle Morris, Sue and Kip Rapp, Nancy and Dave Sauerhoff, Joan and Chuck Sheppard, Liz and Ken Teasdale, and Anne and Eric Weidmann.*

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Members 10% off every day,
20% off on members' days.

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Editor: Elizabeth McNulty
Designer: Ellen Flesch
Cover photo: *Narcissus* 'Mite,' a cyclamineus daffodil. Photo by Cindy Lancaster.
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The *Bulletin* is a benefit of Garden membership.

The BULLETIN (ISSN 0026-6507) is published quarterly by the Missouri Botanical Garden, 4344 Shaw Blvd, St. Louis, MO 63110. Periodicals postage paid at St. Louis, MO.

Postmaster: Please send address changes to: *Bulletin*, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299.

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MISSOURI BOTANICAL GARDEN

bulletin

Summer 2008 Vol. 96, No. 3 www.mobot.org

niki Nights

President's Comment

The Missouri Botanical Garden is a charitable trust governed by the will of Henry Shaw. It is remarkable that this vibrant, contemporary institution is still operated according to the will of a Victorian gentleman—a man who was far-sighted enough to allow for change.

Shaw's will established that the heads of several institutions of higher learning would sit on the board. Today, the Garden adds to those seats St. Louis Community College, which offers at its Meramec Campus the only horticulture degree program in St. Louis. We welcome Dr. Zelema Harris, Chancellor of the St. Louis Community College, to the Garden's Board of Trustees.

As we approach the 150th anniversary of the founding of the Missouri Botanical Garden, I think our founder, Henry Shaw, would be pleased. From inception, Shaw intended the Garden to be an institution of research for the greater good. Today, the collaborative work of Garden scientists—such as the *Flora of China*—is the basis for plant conservation in countries throughout the world. Multi-institutional projects like the Encyclopedia of Life website seek to aggregate knowledge to speed the advance of science. We're going to need the speed—and the unity—to face the challenges of global climate change.

Garden horticulturists are already noticing changes in both plants and pests, as Chip Tynan's article on page 13 explains. Our native plant specialists at the Shaw Nature Reserve propose Missouri prairie natives for home gardens, both for convenience and conservation. Native plants require less irrigation, fertilizer, and pesticide, and they are beautiful.

In addition to growing native, there are many other ways that individuals can make a difference. Look for ways to reduce your carbon footprint in your own garden on pages 12–13. Your membership in the Missouri Botanical Garden, too, helps fund important programs both here and in the 36 countries where our researchers are racing to document the flora—and to preserve it.

A sincere happy birthday on July 24 to Henry Shaw!

Peter H. Raven

Dr. Peter H. Raven, *President*

To discover and share knowledge about plants and their environment, in order to preserve and enrich life.

–mission of the Missouri Botanical Garden

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Table of Contents

8–9 Science & Conservation
Flora of China

10–11 Home Gardening
Grow Native... Stop the Invasives

18–19 Education
Today's Special: Food Chains

Departments

From the President 2
News 4–6
History 7
Green Living. 12–13
In Your Garden Now 14–15
Making a Difference 16
Kidstuff. 17
Family of Attractions 20–22
Tributes 23–25
Events & Calendar. 26–31

We value your feedback

Do you love the living green articles? Do you post the calendar and events section on your bulletin board? Do you wish we'd do more gardening articles, or perhaps something else? We'd love to know your thoughts on the *Bulletin*, your likes and dislikes. Write to the editor at: elizabeth.mcnulty@mobot.org.

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Sustainability Statement

The Missouri Botanical Garden strives to make the most sustainable choices for the future of people, plants, and the planet. The Missouri Botanical Garden *Bulletin* is printed on paper containing 100% post-consumer recycled content, that is, paper that you might have placed in the recycle bin in your home or office this year. It is manufactured using wind power, a renewable energy source. We print locally, so there is no long-haul transportation and we're reinvesting in our community. Why do we print at all? Why not go online? Because paper still has a place—in your purse or briefcase, on a plane, during lunch in the park. That's why we work hard to choose the most environmentally responsible paper around. So enjoy your *Bulletin* in good conscience—and once you've read it, please be sure to recycle it or pass it on to a friend.

News

Bakewell Ottoman Garden with new plantings.

Bakewell Ottoman Garden Dedicated

On May 16, the Bakewell Ottoman Garden was dedicated during a private ceremony with enhanced features and new plantings. Inside the Ottoman Garden, which opened in summer 2006, visitors will find a profusion of flowers that include classic Turkish tulips and drifts of bulbs, exotic citrus, aromatic herbs, pomegranate, and various perennials, set within a private courtyard fit for a sultan. The plants represent what would have been grown in the 16th through 19th centuries in what is now Turkey. St. Louis and Istanbul lie roughly at the same 40-degree latitude.

Located in the secluded northeast corner of the Garden beyond the Linnean House, the Ottoman Garden strives to preserve the authenticity of the period. Visitors find a stone pedestal fountain, or *cheshme*, inviting them to rinse their hands. Brick walkways lead visitors through the flower-laden plots to the center fountain. A paved patio stands covered with a wooden arbor, or *chardak*, with a tiled roof and painted murals of flowers.

The Ottoman Garden is the first of its kind in the nation and was made possible by a gift from the late Edward L. Bakewell, Jr. Its design was directed by Fazil Sutcu, member AIA.

Eco-Libris at the Gate Shop

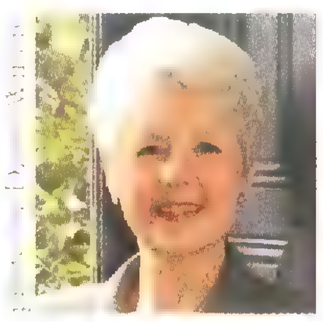
The Garden is proud to be the first botanical garden in the nation, as well as the first retailer in St. Louis, to offer Eco-Libris. Eco-Libris (www.ecolibris.net) offers book lovers a way to balance out the environmental cost for books they purchase. Roughly twenty million trees are cut down every year to produce the books sold in the U.S. For a $1-per-book donation, Eco-Libris plants a tree. They do so in partnership with non-profits in developing counties where deforestation is rampant, so the donation benefits local communities where the trees are planted, as well as the environment. When you make a donation, you have the option of receiving an Eco-Libris sticker to display on the book's sleeve to show your commitment to the environment—it's made of recycled paper, of course!

New HRM Vice President Rebecca Ingram Kutey.

Welcome, New Vice President

In June, the Garden welcomed Rebecca Ingram Kutey as the new Vice President of Human Resource Management. Rebecca served most recently as Associate Director of Employee Network Programs at Citigroup, following her roles as Senior HR Director and Head of National Recruiting & Diversity for CitiMortgage.

"Excellent institutions are powered by excellent people," says Ingram Kutey. "I have been a long-time fan of the Garden, one of St. Louis's most beloved treasures, and look forward to helping preserve and continue the Garden's nearly 150-year tradition of excellence."



Retiring Vice President Sue Wilkerson.

After 20 years of service, the Garden's Senior Vice President of HRM, Sue L. Wilkerson, will retire. During Sue's tenure, the Garden's employee population grew from 225 to 500. "Sue worked tirelessly to build employee programs and benefits," says Garden president Dr. Peter H. Raven. "We are grateful for her dedication."

New board member Dr. Zelema Harris, chancellor of STLCC.

Dr. Zelema Harris Joins Garden's Board

In May, the will of Garden founder Henry Shaw was amended to admit the chancellor of St. Louis Community College to the Garden's Board of Trustees as an ex officio trustee. The Missouri Botanical Garden is a charitable trust established by the will of Henry Shaw (admitted to probate 1889). Other ex officio trustees include the chancellors of Saint Louis University, University of Missouri–St. Louis, and Washington University in St. Louis.

Dr. Zelema Harris is chancellor of St. Louis Community College, a multi-campus system consisting of the Florissant Valley, Forest Park, Meramec, and Wildwood campuses. Dr. Harris formerly served as Parkland College (Champaign, IL) president for 16 years, and as president of Penn Valley Community College in Kansas City, Missouri. She has served on the boards of the American Council of Education, the American Community College Association, the Illinois Governor's Summit on Education, and the Illinois Board of Higher Education.

photo by Kristi Foster

Dr. Peter H. Raven, President of the Garden and Hero of the Planet.

Multiple Awards for Garden's President

Described by *Time* magazine as a "Hero of the Planet," Dr. Peter H. Raven champions research around the globe to preserve endangered plants and animals and is an advocate for building a sustainable environment. Dr. Raven has been president of the Garden since 1971 and during this time has won many prizes and awards, including the nation's highest award, the National Medal of Science. This spring, he received multiple major national and international awards and appointments.

- The BBVA Foundation gave the Award for Scientific Research in Ecology and Conservation Biology to Dr. Raven and co-recipient Harold Mooney, professor of Environmental Biology at Stanford University. The award, which carries a $750,000 prize, was granted to Raven and Mooney because they "lead the world in seeking ways to prevent biodiversity loss."
- The Botanical Research Institute of Texas in Fort Worth presented its 2008 International Award of Excellence in Conservation to Dr. Raven because "he has championed research around the world to preserve endangered plants and animals."
- The Arbor Day Foundation awarded the J. Sterling Morton Award, the highest individual honor given by the foundation, to Dr. Raven for his "commitment to preserving trees and the natural world, which has inspired generations of conservationists around the world."
- The National Geographic Board of Trustees appointed Dr. Raven to the board. Commenting that "National Geographic is fortunate to have the additional counsel and experience of Peter Raven, who has an impressive record of leadership and service in conservation."

photo by

Third-graders from the Mullanphy School enjoy a field trip to the Garden as part of the Science Alliance supported by the Boeing Company.

Science Alliance

The Garden, in collaboration with the St. Louis Science Center and Saint Louis Zoo, is leading the "Science Alliance" partnership with Mullanphy Elementary School, a St. Louis Public School magnet facility, to promote teaching excellence and student achievement in math and science. Through the Science Alliance, educators from the Garden, Science Center, and Zoo will work on-site, providing professional development to teachers. Partners will provide curriculum and instructional materials and supplies, organize regular student field trips, and conduct surveys, reviews, and evaluation of the program. The pilot project at Mullanphy Elementary School is generously funded by the Boeing Company as part of the company's efforts to promote a quality learning environment for St. Louis-area students and ensure future success in the workforce.

photo courtesy George Yatskievych

The rare parasitic plant rediscovered by Dr. George Yatskievych.

Parasite Lost: *Botanist Discovers Unusual Plant Missing since 1985*

Garden curator Dr. George Yatskievych has rediscovered a rare parasitic plant that hadn't been seen in more than two decades. Known from only a single specimen of the plant collected in 1985, Yatskievych and colleagues located it in the forests of western Mexico. The species is even more special, as it constitutes an entirely new genus.

"I've always been interested in plants that don't fit the preconceived notion of what plants should be," says Yatskievych, "but this specimen was so unusual that I had to see for myself what it looked like alive."

The odd, orange-brown plant has a pinecone-shaped cluster of flowers and fleshy celery-like stalks. A parasite, the plant has no chlorophyll at all and depends entirely on its host tree for nutrients and water. Yatskievych, who is identifying and naming the plant for the first time, intends to give it the botanical Latin name "little hermit of Mexico."

"The region where the plant grows is changing rapidly, as the abundant forests are being logged for timber and the slopes burned to become pastures and crop fields," observes Yatskievych. "In another decade, we might never have succeeded in relocating this undescribed genus in the field."

The "parasite lost" was not the only species found on the journey. The group also documented a number of other plant and animal species during the trip, including an unknown caterpillar that researchers in Mexico hope to study further.

Exemplar page by Garden Curator Wendy Applequist.

Encyclopedia of Life Now Online

In February, the Encyclopedia of Life (EOL) went live at www.eol.org. The EOL represents an unprecedented effort to document all life on Earth. Scientists from around the world are collaborating on this free website, which will provide information on the 1.8 million known species of animals, plants, and other living creatures on the planet. Over the next 10 years, this project will provide written information on each species, along with photographs, videos, maps, sound, and sightings by amateurs. It will also contain links to scientific literature—a boon to researchers in the developing world and remote areas.

The effort was spurred by a $10 million grant from the John D. and Catherine T. MacArthur Foundation and $2.5 million from the Alfred P. Sloan Foundation, and will ultimately serve as a global beacon for biodiversity and conservation.

"Anyone, anywhere, at any time, will be able to access this essential biodiversity and conservation information," says Dr. Peter H. Raven, president of the Garden. "The Encyclopedia of Life will provide access to some of the world's best collections and minds."

For decades, scientists tried to compile a list of all species on Earth but failed. It's been too complicated, too expensive, and too cumbersome. This effort may succeed where the others have faltered because of new "aggregation" technology and collaborative systems for accumulating and editing content.

The Missouri Botanical Garden is one of the cornerstone partners in the EOL along with the Smithsonian, the Field Museum, Harvard University, Marine Biological Laboratory, and the Biodiversity Heritage Library (BHL) (with which the Garden is also a partner). The Garden has the responsibility of coordinating the botanical community to complete the plant pages. Garden staff are also working to develop the BHL portal, digitize reference publications, and contribute to the development of the underlying architecture.

The website launch included 30,000 fish pages and approximately one million pages with a name and no pictures or descriptions. There are also 24 "exemplar" pages that have been handcrafted by specialists. Among these are three prepared by Garden staff: Prairie Spagnum (*Sphagnum palustre*) by the Garden's senior vice-president of science and conservation Dr. Bob Magill, Madagascar Periwinkle (*Catharanthus roseus*) by Dr. Wendy Applequist, and White Pine (*Pinus strobus*) by Dr. George Yatskievych. These pages provide a glimpse of what EOL will eventually look like for all 1.8 million species.

History

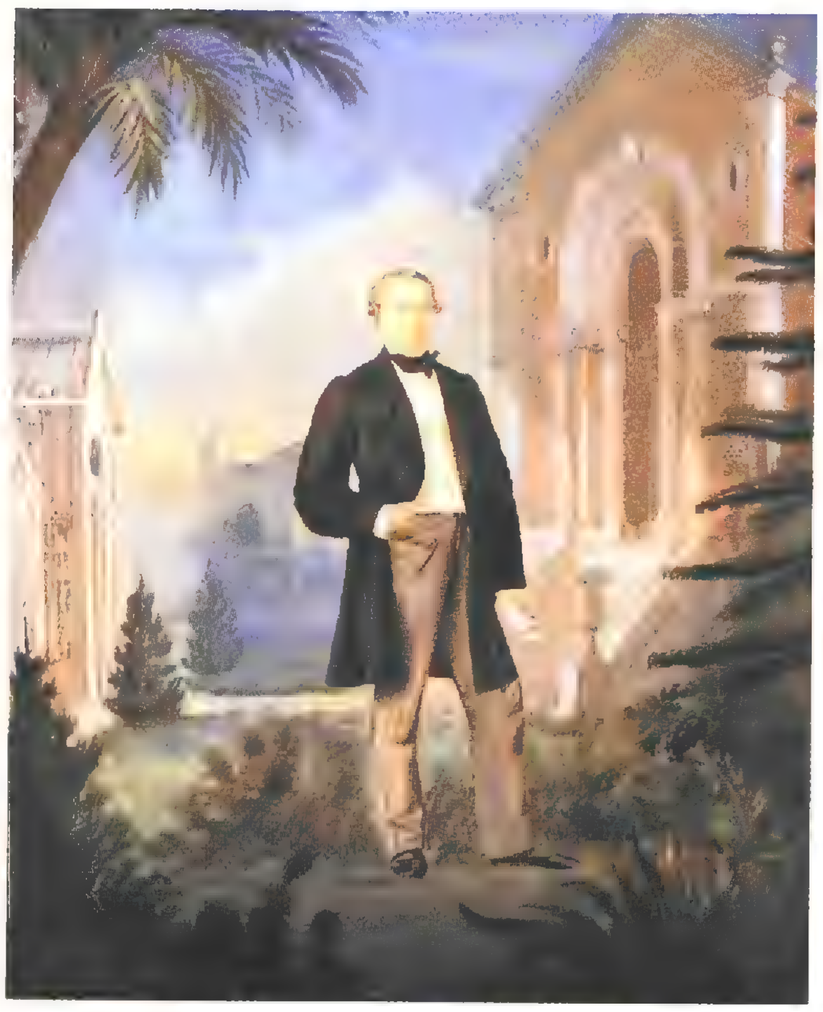


photo courtesy MBG Archives

Watercolor portrait of Henry Shaw circa 1859 by Emile L. Herzinger.

Henry Shaw

(1800–1889)

First opened to the public in 1859, the Missouri Botanical Garden is a National Historic Landmark and the oldest botanical garden in continuous operation in the nation. The year 2009 will mark the Garden's 150th anniversary, or sesquicentennial (from the Latin sesqui, *one and a half, and* centum, *hundred). Throughout 2008, we will explore interesting aspects of the Garden's history.*

Shaw the Man (Part 2)

by Andrew Colligan, Archivist

From last issue: Henry Shaw left England for St. Louis to seek his fortune as a hardware importer. By age 40, he was wealthy and retired from retail trade.

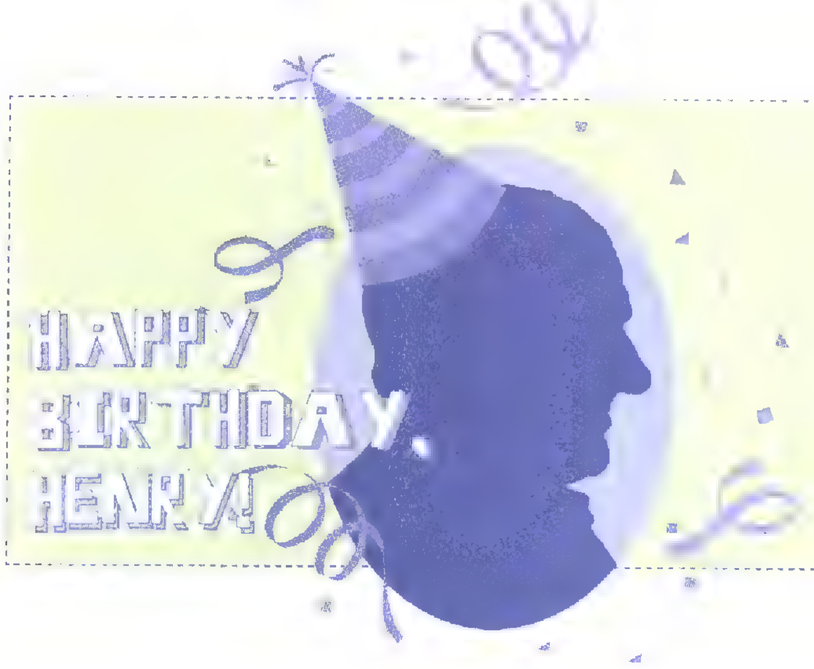
Following his retirement in 1840, Shaw traveled extensively in Europe and as far as Constantinople and Egypt. In 1851, the first World's Fair was held in London, inspiring Shaw to travel abroad once more. By his own account, it was while walking the grounds of Chatsworth, the residence of the Duke of Devonshire, considered by many to be the most magnificent private estate in England if not Europe, that the idea for a botanical garden came to him.

Returning to St. Louis in December of 1851, Shaw decided to act upon his idea and began correspondence with renowned botanists of the day, such as Sir William Hooker of the Royal Botanic Gardens, Kew and Dr. Asa Gray of Harvard. With the counsel of local botanist and physician Dr. George Engelmann, Shaw began to create a library and herbarium to support scientific research.

With construction completed on Tower Grove House on his country estate in 1849, Shaw hired architect George Barnett to design other structures: his townhouse (1851), the Museum Building (1859), the Linnean House (1882), and in Victorian fashion, his own mausoleum (1885). In 1859, Shaw opened the Missouri Botanical Garden to the public. He went on to found Tower Grove Park in 1868 as well.

With his wealth and youth, Shaw could have moved to more affluent parts of the U.S. or Europe, but he chose to remain in his adopted hometown St. Louis the rest of his life. Shaw was the epitome of an English gentleman: polite and modest. Although he had no formal knowledge of music, Shaw was very fond of it, often frequenting Sunday afternoon concerts in Tower Grove Park and enjoying trips to the theater when the chance arose.

Shaw lived into his ninetieth year, an uncommon age to achieve in the 19th century, and, although weak, he still possessed an uncanny sharpness of mind. He died at home in Tower Grove House on August 25, 1889, from a bout of malaria. He was buried on the grounds he had loved so much—prairie fields he had ridden his horse over as a young man new to St. Louis, and then left to the public as one of the world's premier botanical gardens.



Henry Shaw's birthday is Thursday, July 24. Join us then to celebrate with old-fashioned entertainment, a Victorian fashion parade, and refreshments (while supplies last).

Flora of China

by Nicholas J. Turland, Associate Curator

Imagine tropical forests full of palms, ferns, and orchids; cool misty temperate forests; vast rolling grasslands; alpine plateaus with frozen lakes. These are just some of the glorious wild places still to be found in China, a country in which one-eighth of the world's plant species thrive. The United States and Canada together contain about 20,000 species of vascular plants, while China alone (roughly the same size as the U.S.) holds an estimated 31,500 species. The only countries with more are Brazil and Colombia.

Chinese plants are of supreme scientific, medicinal, and horticultural worth. Moreover, approximately 53 percent of the Chinese flora is endemic—found nowhere else—and thus important for plant conservation. Studying this diversity has been of critical importance to Chinese and Western botanists concerned with understanding and preserving it. Leading such an effort today is the *Flora of China* project, an international collaboration coordinated at the Missouri Botanical Garden.

A "flora" is a scientific publication that documents and describes a region's plant life. The first comprehensive flora of China was the Chinese-language *Flora Reipublicae Popularis Sinicae* (Flora of the People's Republic of China, or "FRPS" for short) completed in 2004.

In 1979, Chinese and American botanists proposed an international collaborative project to revise FRPS and publish it in English. The *Flora of China* launched officially in 1988. Today, the *Flora of China* project includes a 22-member editorial committee and 11 research institutions in China, the United States, Britain, and France.

All of the *Flora of China* treatments are co-authored by both Chinese and non-Chinese botanists. Some 480 authors and 160 botanical illustrators have contributed thus far. In addition, numerous botanists, editors, librarians, herbarium curators, and, importantly, grant-awarding foundations and private donors have assisted with the production of each volume.

The *Flora of China* provides identification keys, scientific descriptions, habitat and distribution records, line drawings, and other useful information, such as the plant's vulnerability in the wild and its local uses (e.g., medicinal, agricultural, economic). Almost 35 percent of China's flora is known to have medicinal properties—and many recent developments in Western pharmaceuticals are based on traditional Chinese medicines. One such drug derives from the wild plant *Artemisia annua* and is a very effective anti-malarial. The medical potential of thousands of plants throughout China is not fully known, however, this is one reason why an accurate, up-to-date inventory of the country's flora is so important.

Bailua Ling Nature Reserve, Yunnan. Garden Associate Curator Nicholas J. Turland (lower right) with associates from several universities.

Why It Matters

More than half of the species of plants in China are found nowhere else. It is also likely that the number of endangered species in China, once recorded at 10 percent, is much higher. Hundreds of species of ornamental plants (for example, the slipper orchids, *Paphiopedilum*) have become extremely rare and perhaps extinct in nature because they are intensively collected and traded. As many as 11,000 species of Chinese plants are used medicinally, but only a fraction of the supply is derived from cultivation; the remainder is gathered from the wild. The extensive exploitation of natural habitats means that many Chinese species are threatened and may become extinct. Population pressures, misuse of resources, and extensive industrialization have created many environmental problems. Deforestation, soil erosion, and pollution have caused serious deterioration of China's natural resources.

The information included in the *Flora of China* is extremely important for the proper management of the plant resources of China and for solutions that address social impact on nature. A fuller understanding of these plants will help the preservation, and the restoration, of a flourishing but delicate flora. Your Garden membership helps fund these worthwhile science and conservation programs around the world.

Flora of China *is published jointly by Missouri Botanical Garden Press and Science Press in Beijing. Copies of the books can be ordered through MBG Press, and electronic versions of the treatments, including drafts of treatments yet to be published, are freely available on the* Flora of China *website (flora.huh.harvard.edu/china). All text, illustration, and introductory volumes are expected to be complete in 2013.*

Garden Senior Horticulturist Jason Delaney, Jessica Arcate of the New York Botanical Garden, and Galen Gates of the Chicago Botanic Garden on an approved collecting expedition in China.

Ornamentals from China

In August 2007, Garden Senior Horticulturist Jason Delaney spent a month in China as part of an expedition to seek out plants with ornamental potential. Delaney was accompanied by Jessica Arcate, curator of woody plants at the New York Botanical Garden, and Galen Gates, the manager of living collections at the Chicago Botanic Garden. The trip was funded by the North American Plant Collections Consortium with partial assistance from the Greater St. Louis Iris Society.

The trio conducted a month of field work across the northeast of China, which shares a similar climate to the upper Midwest. They found several potential plants and one new iris—a beardless variety similar to a Siberian iris—which had all been approved for collection by the Chinese government.

Because commercial nursery trade produces huge amounts of a very limited selection of plants, the collection of non-endangered wild plants can be very important for the preservation of genetic diversity. Great care is taken, however, to ensure that these species, once removed from their home, do not display invasive properties.

GROW native!

A native plant species is one that occurs naturally in a particular region or ecosystem without human intervention.

Over tens of thousands of years, native plants have adapted to a given region's unique climate and soil requirements, making them extremely hardy and reliable performers.

In the drought-prone Midwest, native plants are typically upland prairie plants, which have extensive root systems designed to find water. These roots also hold the soil, helping prevent erosion, and tend to choke out weeds and competitors while supplying habitat for small wildlife. Native plants are good for the environment in other ways. They are generally drought-resistant, so require less watering. Having evolved to suit their environment, they do not require much in the way of soil amendments or fertilizer, and they are typically pest-resistant.

The St. Louis region offers a rich array of beautiful native plants for use in your home garden. Convert part of your yard to native plants and watch the birds and butterflies flock while you save time, money, labor, and energy!

Missouri native wildflowers thrive on the Shaw Nature Reserve glade.

Sources for Native Plant Gardeners

by Cindy Gilberg, Native Plant Horticulturist, Shaw Nature Reserve

On a typical day in the Whitmire Wildflower Garden at the Shaw Nature Reserve, butterflies sip nectar, birds devour seeds and berries, bees buzz, dragonflies dart, and hummingbirds nest. Native grasses and flowers sway in the breeze—a visual symphony of colors and textures. Established natural landscapes such as these thrive with only the lightest touch of the gardener's hand.

Want to explore further and learn more? Adding native plants into your existing landscape or converting to a low-maintenance native landscape is a natural choice (forgive the pun!). Discover what will work for you by doing a little research.

In your quest for inspiration, visit some of our region's native plant gardens within an hour's drive of St. Louis:

- The Garden's Native Plant Garden in the William T. Kemper Center display garden.
- The EarthWays Center and the Butterfly House gardens.
- Powder Valley Conservation Nature Center (Kirkwood).
- Whitmire Wildflower Garden at the Shaw Nature Reserve.

An excellent source of information is the Missouri Department of Conservation's Grow Native! program. Peruse the website, www.grownative.org, for landscaping ideas, detailed descriptions, and photos of native plants. There is also a directory of nursery sources for native plants and seeds.

Now in its third year, Shaw Nature Reserve's Native Plant School offers hands-on learning about native landscaping. This year's topics include rain-gardening, birdscaping, prairie reconstruction, propagation, and container gardening. Each in-depth class covers a specific concept and is conducted in an informal setting (outside as much as possible). More information and schedules can be found at www.shawnature.org.

Wild Ones (www.for-wild.org) is a national organization with a local St. Louis chapter that promotes the use of native plants in the landscape, provides education, and focuses on preserving the biodiversity of our natural habitats. They host an annual tour, in addition to monthly visits, of local native plant landscapes.

So begin your adventure; you will be rewarded with a whole new outlook on landscaping and the natural world around us.

STOP THE INVADERS

When good plants go bad... really bad!

Anyone who has ever planted a garden has encountered weeds, but with a little mulch and some old-fashioned pulling, these garden nuisances can be kept in check. Invasive plants are different. They are plants that run amok, spreading out into the landscape swiftly, displacing native wildflowers, engulfing wooded areas, altering ecosystems, threatening endangered species, and causing great economic and ecological harm.

Where do they come from?

Surprisingly, many of the invasive plants now causing problems were intentionally imported to be used as ornamental plants or for landscaping, livestock feed, or erosion control. Most non-native plants cause no problem, but about 10 percent become invasive. When freed from the natural enemies that kept them in check in their native place of origin, these plants become aggressive monsters.

What You Can Do

1. *Stop them before they start.* As a home gardener, you can be part of the effort to stop invasive plants. Educate yourself on which plants are invasive in our area and grow only non-invasive species. Don't bring exotic plants home from other regions; never dump aquarium plants into natural waterways; read wildflower and birdseed mixes to know what you are putting in your yard and garden.

For more information, visit www.mobot.org/invasives.

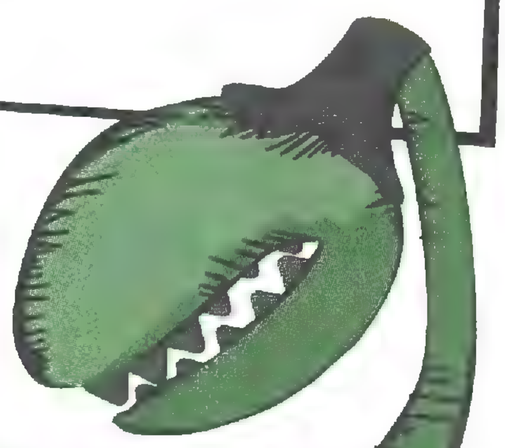
2. *Stop them before they get out of control.* If you find these plants growing in your yard, remove and destroy them immediately. Do not compost! Dispose of invasive plant material in heavy-duty trash bags.

3. *Volunteer in a local group.* Many area municipalities, parks departments, and garden clubs have launched invasive eradication efforts. The Garden's Litzsinger Road Ecology Center has worked with the Ladue Garden Club, the City of Olivette, and various school districts to eradicate bush honeysuckle and garlic mustard, and to plant native wildflowers and landscaping in their place.

DID YOU KNOW?

Scary Invasive Facts

- $137 billion is lost annually in agriculture, forestry, fisheries, and maintenance of open waterways.
- 2.6 million acres of our national parks are infested.
- Half of all endangered species in the U.S. are at risk because of invasive plants.



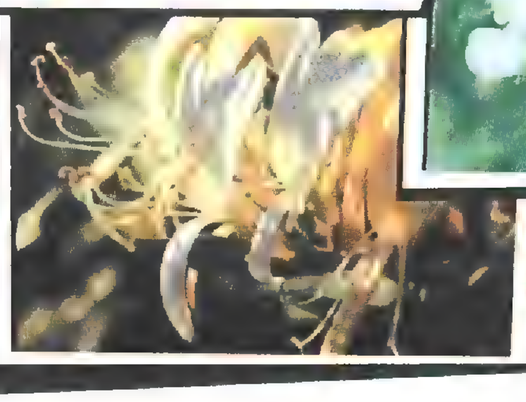
TOP 5 MOST WANTED INVADERS IN THE MIDWEST

1 **Bush honeysuckle** *(Lonicera maackii)*

2 **Purple loosestrife** *(Lythrum salicaria)*

3 **Sericea lespedeza** *(Lespedeza cuneata)*

4 **Garlic mustard** *(Alliaria petiolata)*



5 **Japanese honeysuckle** *(Lonicera japonica)*

Chuck Bargeron

Reduce Your Carbon Footprint

10 Simple Things Home Gardeners Can Do Today

Your "carbon footprint" is the impact you have on the environment measured in units of carbon dioxide (CO_2, the most notorious greenhouse gas). Various websites can calculate your specific number (carboncalculator.org, carbonfootprint.com). We can make simple changes to reduce our footprint, and home gardeners have even more options.

Gardening is generally good for the environment. Gardening establishes a connection with nature, fostering a desire in the gardener to protect the environment. Even more directly, a single tree can absorb one ton of carbon dioxide over its lifetime. So, without further ado, here are ten simple things home gardeners can do to reduce their carbon footprints.

1 Plant a tree

Trees sequester carbon dioxide, meaning they absorb it from the atmosphere. Plant a tree on the south side of your house to provide shade in summer and help reduce energy needs. Visit the Garden's www.gardeninghelp.org for recommendations on the best trees for our region. [Kemper Center for Home Gardening fact sheet: Planting Trees.]

2 Grow vegetables

Home-grown vegetables are delicious, save money, and are transportation-efficient. The walk to the tomato patch doesn't impact the environment the way a truck or an airplane delivery does. [Kemper Center for Home Gardening fact sheet: Growing Vegetables at Home, also Tomatoes, Peppers.]

3 Be compost-ess with the mostest

If you don't already compost, start today. Composting keeps yard waste out of the landfill and recycles it into organically rich, FREE fertilizer. Take a composting class at the EarthWays Center. Purchase a compost bin made of recycled plastic lumber from the Garden's Plastic Pot Recycling program. [Kemper Center for Home Gardening fact sheet: Composting Yard Waste.]

4 Say "no" to N

The manufacture of synthetic nitrogen (N_2) fertilizer requires non-renewable fossil fuel, usually natural gas. Kick the carbon habit; use your homemade compost instead, or grow native plants, which often do not require extra fertilizer.

5 Don't be pesticidal

Pesticides also require non-renewable fossil fuels for manufacture. The best defense is a good offense; healthy plants without drought stress, such as plants native to the area, can often resist insect attacks. For vegetables, you can try pyrethrin-based sprays, which contain a compound derived from chrysanthemums. The chemical breaks down quickly, but it also kills good bugs (ladybugs, bees), so use with restraint.

6 Collect rainwater

Processed, potable water is energy-expensive. Why pay for fluoridated water, which can damage sensitive plants, when rain is available FREE? Purchase a rain barrel for your downspout and watch your plants thrive—and your carbon footprint shrink. Visit www.rainbarrelguide.com for more information.

7 Adapt and go native!

Native plants have spent millennia perfecting their local survival techniques. Plants of Merit are especially well-adapted varieties and cultivars. These hardy plants require less fertilizer, no pesticides, and many are drought-tolerant, requiring less watering. (See www.plantsofmerit.org and the article on page 10 of this issue.)

8 Don't pitch those pots

The Garden's nationally recognized Plastic Pot Recycling program has been going strong for ten years. Don't let plastic pots and nursery packs end up in the landfill—bring them in for recycling. New this year—recycle your pots all day, every day through October 31. See the calendar section for more details.

9 Sweat

Replace gas-powered mowers and leaf blowers with human-powered equipment such as push mowers and rakes. Not only will you reduce your carbon footprint, you'll reduce your waistline—and your hearing loss.

10 Don't use peat products

Peat is one of the world's most important carbon-storing materials—and it is a rapidly depleting resource. Use homemade compost, coco-fibers, and other more sustainable options. Visit the BBC's Ethical Gardener to learn more: www.bbc.co.uk/gardening.

Global Warming in the Garden

by Chip Tynan, Garden Answer Man

The USDA plant hardiness zone map was last updated in 1990 and places the St. Louis region in Zone 6a. The National Arbor Day Foundation, however, published an updated version of the map in 2006, citing evidence of global climate change and showing most areas of the U.S. are now a zone warmer.

Zone 7 plants should only barely make it in this area, but they might be more likely to succeed now. The extreme seesaws of St. Louis weather may eventually derail these plants, but here are a few whose performance Garden horticulturists are watching for evidence of global climate change:

- Although the original planting was in the Temperate House, hardy banana (*Musa basjoo*) now grows year-round outdoors in the Chinese Garden.
- Oriental persimmon (*Diospyros kaki*) now bears fruit in the Grigg Nanjing Friendship Chinese Garden.
- *Crinum* species are now over-wintering with a bit of protection in the bulb gardens.
- Bodnant viburnum (*Viburnum* x *bodnantense*) was only marginal here 20 years ago, but now can be seen in the Jenkins Daylily Garden.
- The dwarf palmetto *(Sabal minor)* in the Kemper Center Children's Garden is producing new growth.

While these plants may now survive here year-round, a more worrisome development is the ability of warm-weather pests to do the same. We're already seeing azalea lace bugs, tulip scale, and magnolia scale—insects formerly associated with the deep South.

The National Wildlife Federation has published a *Gardener's Guide to Global Warming*. Download a copy from their website: www.nwf.org/gardenersguide.

What to do in your garden now...

clip and save

July

all month

- Deadhead spent perennials and annuals.
- Remove infected leaves from roses.
- Pick up fallen leaves.
- Continue fungicidal sprays as needed. Fertilize container plants every 2 weeks with a water-soluble solution.
- Newly planted trees and shrubs should be watered thoroughly once a week.
- Maintain a 2–3 inch layer of mulch around tomatoes and peppers to prevent blossom-end rot.
- Cover grape clusters loosely with paper sacks to provide some protection from marauding birds.
- Water grass deeply at least once a week. Early morning irrigation allows turf to dry before nightfall and reduces the chance of disease.

week 1

- Apply no fertilizers to trees and shrubs after July 4.
- Plant zinnia seed by July 4 for late bloom in annual border.
- Hot, dry weather is ideal for spider mites. Look for leaves speckled above and yellow below and evergreen needles that appear dull gray-green to yellow-brown.
- To minimize insect damage to squash and cucumber plants, cover them with lightweight floating row covers. Remove covers once plants flower.
- Prune out and destroy old fruiting canes of raspberries after harvest is complete. Blackberries are ripening now.

week 2

- Prune climbing and rambler roses after bloom.
- Dig potatoes when the tops die. Plant fall potatoes now.

week 3

- Powdery mildew is unsightly on lilacs, but rarely harmful. Shrubs grown in full sun are less prone to this disease.
- Cut semi-hardwood off spring flowering shrubs now. Summer pruning of shade trees can be done now.
- Harvest onions and garlic when the tops turn brown.
- Keep cucumbers well watered. Drought conditions will cause bitterness.
- Sweet corn is ripe when the silks turn brown.
- Monitor lawns for newly hatched white grubs. If damage is occurring, apply appropriate controls.

week 4

- Divide bearded iris now.
- For the fall garden, sow seeds of collards, kale, sweet corn, and summer squash as earlier crops are harvested. Sow seeds of carrots, beets, turnips, and winter radish for fall harvest.
- Early peach varieties and thornless blackberries ripen now.

August

all month

- Deadhead annuals/perennials as needed. Annuals may appear leggy and worn now. These can be cut back hard and fertilized to produce a new flush of bloom.
- Continue spraying roses that are susceptible to black spot and other fungus diseases.
- Compost or till under residues from harvested crops. Watch for fall webworm activity.
- Prop up branches of fruit trees that are threatening to break under the weight of a heavy crop.
- Once bagworms reach full size, inseticides are ineffective. Pruning off and burning large bags provides better control.

week 1

- Feed fall-blooming perennials (mums, asters) for the last time.
- Divide bearded iris. Discard old center sections and borer-damaged parts. Replant so tops of rhizomes are just above ground level.
- Prune hedges to shape for the last time this season.
- Broccoli, cabbage, and cauliflower transplants should be set out for the fall garden.
- Spray black locust trees now to protect against damage by the locust borer.

week 2

- Roses should receive no further nitrogen fertilizer after August 15.
- To grow big dahlia flowers, keep side shoots pinched off and plants watered and fertilized regularly.
- Evergreens can be planted or transplanted now to ensure good rooting before winter arrives. Water the plant and the planting site several days before moving.
- Cure onions in a warm, dry place for two weeks before storing. Sow seeds of beans, beets, spinach, and turnips now for the fall garden.
- Cover ripening fruits with netting to protect from birds.
- Fall-bearing red raspberries are ripening now.
- Apply insecticides now for grub control on lawns being damaged by them. Zoysia lawns should receive their final fertilizer application.
- Hummingbirds are migrating through gardens now.

week 3

- Begin planting lettuce and radishes for fall now.
- Watch for fall webworms.
- Cultivate strawberries.
- Lawns scheduled for renovation this fall should be killed now. Have soil tested to determine fertility needs.
- Dormant lawns should be soaked to encourage strong fall growth.
- Monitor for spider mite activity. Reduce their numbers by hosing off with a forceful spray of water.

For additional information on plant care and gardening:

- *visit the William T. Kemper Center for Home Gardening.*
- *call the Horticultural Answer Service, Monday through Friday, 9 a.m. to noon, at (314) 577-5143.*
- *check out the Gardening section at www.mobot.org.*

photo by Leslie Wallace

September

all month

- ❑ Begin fall seeding or sodding of cool-season grasses. Seedbeds should be raked, de-thatched or core-aerified, fertilized, and seeded. Keep newly planted lawn areas moist, but not wet. Cool season lawns are best fertilized in fall. Make up to three applications between now and December. Do not exceed rates recommended by fertilizer manufacturer.
- ❑ Autumn is a good time to add manure, compost, or leaf mold to soils for increasing organic matter content.

week 1

- ❑ Cut annuals to provide vigorous plants for over-wintering.
- ❑ Dig herbs from the garden and placed in pots now for growing indoors this winter.
- ❑ Pick pears before they are fully mature. Store in a cool, dark basement to ripen.
- ❑ Sow seeds of radish, lettuce, spinach, and other greens in a cold frame.

week 2

- ❑ Plant spring bulbs (except tulips) as soon as they are available.
- ❑ Ready houseplants for winter indoors. Prune back rampant growth and protruding roots. Check for pests.
- ❑ Bring plants indoors a month before the heat is turned on.
- ❑ Pinch the top of Brussels sprout plants to plump the developing sprouts.
- ❑ Tie leaves around cauliflower heads when they are about the size of a golf ball.
- ❑ Keep broccoli picked regularly to encourage additional production.
- ❑ Top-dress lawns with compost or milorganite, best after aerifying.

week 3

- ❑ Poinsettias can be forced into bloom for the holidays if they are moved indoors now to a sunny windowsill. Each night, they must be kept in a cool, dark place where there is no light for 14 hours. Continue until proper color is achieved in 6 to10 weeks.
- ❑ Pinch off any young tomatoes that are too small to ripen to channel energy into ripening the remaining full-size fruits.
- ❑ Newly seeded lawns should not be cut until they are at least 2–3 inches tall.

week 4

- ❑ Divide perennials now. Enrich the soil with compost before replanting.
- ❑ Divide peonies now. Replant shallowly in a sunny site.
- ❑ Lift gladiolus when their leaves yellow. Cure in an airy place until dry before husking.
- ❑ Check along peach tree trunks to just below the soil line for gummy masses cased by borers. Probe holes with thin wires to puncture borers.
- ❑ Sow spinach now to over-winter under mulch for spring harvest.

photo by Tamara Palmer

Featured Plant of Merit™

Ruby grass
Melinis nerviglumis 'Pink Crystals'

Growing in tufts up to 24 inches tall, this tropical grass adds a fresh look to sunny borders. Ruby-pink flowers in panicles covered with silky hairs are showy late summer to late fall on stems rising from a clump of erect blue-green leaves. Flowers fade to white over time and the foliage turns reddish-purple in fall. This grass may be grown from seed, and it looks great in containers.

Plants of Merit™ is a program of the Missouri Botanical Garden. Plants are selected by regional horticulture experts for outstanding qualities and dependable performance in the lower Midwest. View all current PMs at www.plantsofmerit.org.

Plants of Merit™ Challenge

The Plants of Merit program has been awarded a generous challenge grant from the William T. Kemper Foundation–Commerce Bank, Trustee. For 2008 and 2009, the Foundation will match all new donations to the Plants of Merit program dollar-for-dollar up to $50,000 each year. Funding will help underwrite printing and distribution of program information materials, website development, plant trials, visits with nurseries and garden centers throughout the region, presentations at industry meetings, and more.

This is a great opportunity for Garden members to increase the impact of Plants of Merit. To participate, please contact the Institutional Advancement Office at (314) 577-9500.

Making a Difference

Shapleigh Memorial Fountain at the edge of the Lehmann Rose Garden.

Warren M. Shapleigh

Shapleigh Honored for 50 Years

When Warren McKinley Shapleigh joined the Garden's board of trustees in 1958, the Climatron® did not yet exist and Dwight D. Eisenhower was president of the United States. With 50 years of service, Shapleigh is the longest serving trustee in the Garden's history. An emeritus trustee today, Shapleigh has dedicated himself to the business of the Garden during a remarkable period of change and growth.

Shapleigh chaired the trustee committee that selected Dr. Peter H. Raven as the new director of the Garden in 1971. He has been instrumental in the success of several fundraising campaigns supporting education and research. Shapleigh has also made possible a variety of additions to the Garden, including the Shapleigh Memorial Fountain, the Kercheval Fountain, a viewing area in the Margaret Grigg Nanjing Friendship Chinese Garden, and the land on which the Monsanto Center is located.

In April, the Garden's board of trustees presented Shapleigh with a resolution honoring his five decades of service "as a devoted friend who has demonstrated an extraordinary commitment to improving the quality of life on our planet."

"For half a century, Warren Shapleigh has been one of the Garden's strongest supporters and dedicated leaders," says Dr. Peter H. Raven, Garden president. "We are very grateful for his years of service and commitment."

Jane P. Thomas

Volunteer Jane Thomas's Legacy

For 18 years Jane Priem Thomas volunteered at the Garden's library. Although trained as a nurse, Jane was a noted bibliophile and had dedicated herself in retirement to nursing books back to health. She was a skilled conservator, taking books apart, rebinding them, even delicately "washing" the paper to de-acidify it.

"Jane loved the Garden," says her husband Lewis Thomas. "She was acutely aware of the importance of the Garden's research program and felt very strongly about her opportunity to do something constructive to help."

When she died February 13 at age 76, her husband decided that an appropriate legacy would be to stimulate interest in the Ellerman Challenge to endow the Garden library with a full-time conservator.

The Missouri Botanical Garden's book collection numbers more than 180,000 volumes, including more than 6,500 rare books. A professional conservator would develop a conservation plan, train and supervise additional volunteer conservators, and continue the work that is so essential to ensure long-term preservation of the library's collections. For more information or to make a donation, contact the Office of Institutional Advancement at (314) 577-9495.

KIDSTUFF

Be a Sustainability Superhero with the Three R's!

Do you know that if every morning newspaper in the United States were recycled, six million tons of waste would never end up in the landfill? "Sustainability" means meeting our needs without keeping future generations from meeting their needs.

Learn to practice the three R's and you'll be on your way to being a Sustainability Superhero:

Reduce

"Reduce" means to use less of something. For example, you can take shorter showers to save water. This same idea works when you grow native plants around your house. Native plants need less water to survive. Can you think of three more ways you can use less?

1. _____
2. _____
3. _____

Now pick your favorite idea and pledge to do it.

Reuse

Try to get more use out of items you already have. For example, did you know that you can reuse paper in the recycle bin to color or draw? Also, you can use gourds to make bird houses. Write down something else you can reuse:

_____

Recycle

Recycling at home is a snap. Have your parents check out www.swmd.net to get set up, then it's ready, set, SORT.

Circle everything you recycle in your house.

Glass
(bottles, pickle jars)

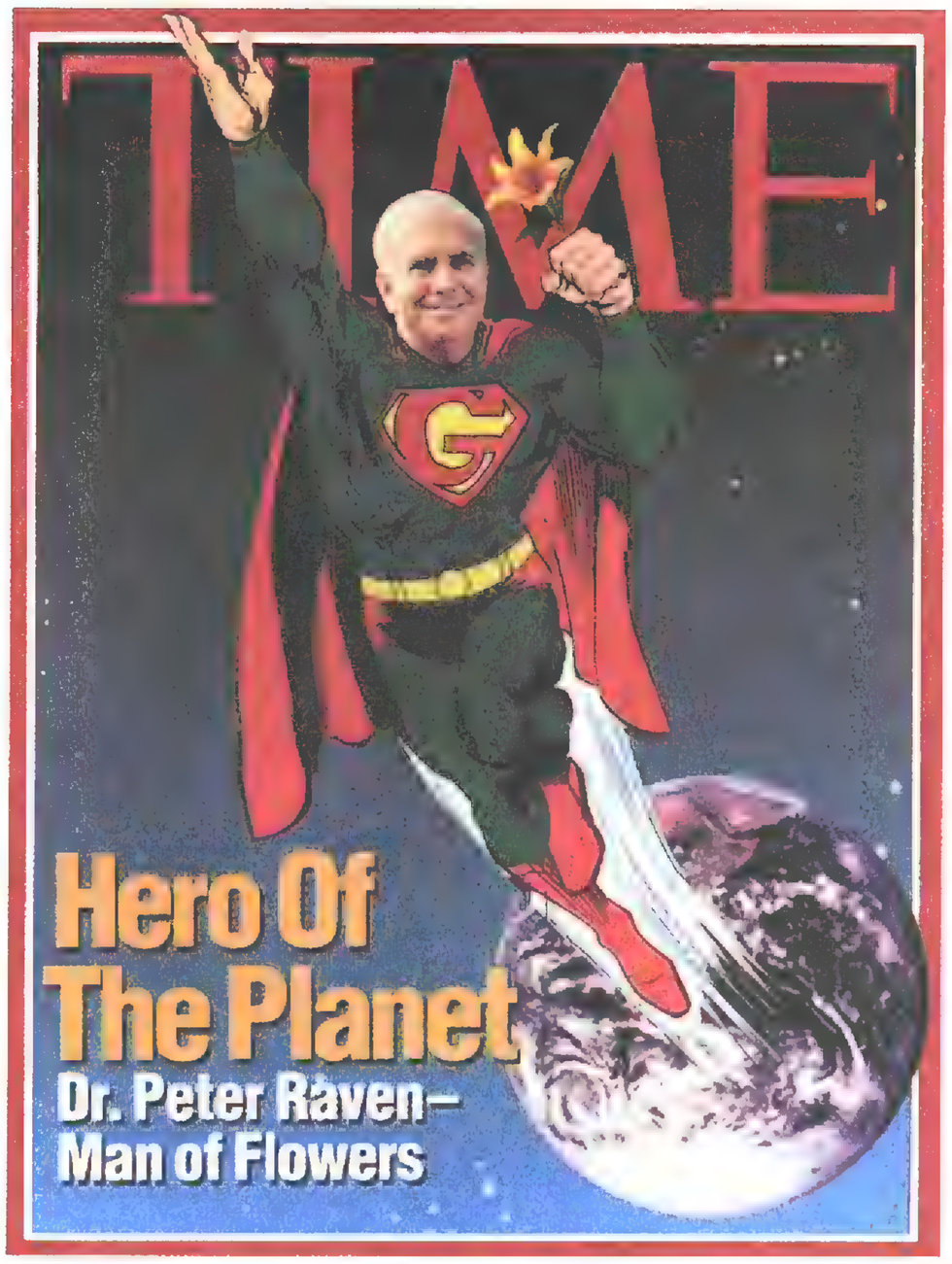
Aluminum
(beverage cans)

Steel cans
(tuna fish, chili, etc.)

Paper
(newspaper, junk mail, old homework)

Plastic

1 2



A faux Time *magazine cover with the Garden's president, Dr. Peter H. Raven.*

RECYCLING WORD SEARCH

Aluminum	Native Plants	Reuse
Glass	Paper	Recycle
Gourd	Plastic	Steel
Landfill	Reduce	Sustainability

L A N D F I L L Y T J U
E G D E L P X M T M G L
C L S H I J C Z I U S R
U Q T A P H S N L N T E
D P E R R I G K I I N P
E R E C Y C L E B M A A
R B L K S L C Q A U L P
X C E J L J J G N L P Q
X P U G D B R T I A E P
U L X L R P O Z A G V S
I A R A U D U Q T X I Q
J S A S O Z L G S O T D
W T S S G I V K U D A R
F I O L W F F S S C N E
X C X S R T A X Q G P N
G R X H T R E U S E C J

Today's Special: Food Chains

Programs at the Garden take Science Outside the Classroom

by Melissa Poth, Supervisor of School Programs

What's on the menu at the Garden? Seeds, leaves, and grubs! Students visiting the Garden may not think this meal sounds very appetizing, but the Garden has great meals for insects, birds, foxes, and other native wildlife. Teachers can bring students to the Garden to learn about native producers, consumers, and decomposers through a new school program "Today's Special: Food Chains." After searching for evidence of plant and animal interaction in the English Woodland Garden and investigating a decomposing log, students receive a plant that will attract native wildlife at home.

A recent *Newsweek* article, "No Child Outside the Classroom," reported that one of the effects of the No Child Left Behind Act has been a decrease in field trips. With more emphasis on standardized test results in language arts and math, science education has been put on the back burner. Studies show that children are suffering from "nature deficit disorder," and it has become even more important for outdoor education institutions like the Garden to support teachers and students.

The class on food chains is just one of nine new garden classes available this year for students in grades K through 8. Students can rendezvous in our rainforest, learn how the birds and the bees lead to flowers and trees, and participate in classes on the connections among people, plants, and the environment. All classes meet local science standards—and offer fun, interactive learning for the students.

Above: A school group investigating pond life at the Garden. Interactive outdoor learning instills a love of nature in children, who may grow up to be tomorrow's botanists, ecologists, and environmentalists.

Teachers looking for a self-guided experience are able to check out a "Shaw's Satchel" for their students. Each satchel includes age-appropriate activities which lead students to explore and discover the many plants that are grown in a botanical garden. Special emphasis is given to the Garden's diverse collection of plants including the Climatron® tropical rain forest. A recent class in the Climatron prompted a student to inquire "Can I live here?" While the student was discouraged from building his own hut, he was encouraged to visit as often as he wished!

Guided tours of the Garden are also available for students. One of the most popular guided tours is the "*Seiwa-En* Japanese Garden" tour. In 90 minutes, students learn how the design of this garden is influenced by the history and culture of Japan. Tours are available on other areas and themes as well.

The Garden offers a rich selection of science education in our outdoor "classroom." To combat the rising costs of transportation and school lunches, all classes at the Garden, Litzsinger Road Ecology Center, and Shaw Nature Reserve are free to St. Louis City and County students. The Garden also offers school programs at a nominal charge at our family of attractions: the Sophia M. Sachs Butterfly House and the EarthWays Center. For more information or to register visit us online at www.mobot.org. Under "Education," click on "For Teachers and Students."

Your membership helps support school programs at the Garden. All school programs are FREE to students living in St. Louis City and County.

photos by Linda Cain

Volunteer instructors lead classroom and outdoor activities for school groups.

Be a volunteer instructor

With a wide variety of backgrounds and skills, volunteer instructors have one thing in common: a commitment to sharing their knowledge and love of science and the natural world with children. These docents assist Garden staff with teaching students in grades K though 8. Do you have the right stuff? You must be dependable, enjoy meeting the public, and be comfortable imparting information in an informal setting. Minimum commitment is one weekday class per week for the year. To learn more, contact Jackie Juras, Manager of Volunteer Programs, at (314) 577-5187 or e-mail jackie.juras@mobot.org.

Nine New Classes for 08–09

- Heaps of Seeds
- A Seasonal Snapshot
- Tops & Bottoms
- Rainforest Rendezvous
- Survivor MBG: Plant Adaptations
- Trees Demystified
- Dr. Carver, Soil Scientist
- Birds and Bees lead to Flowers and Trees
- Today's Special: Food Chains

Great Green Adventures

through October, Tuesday through Friday at 10 a.m. and noon, Saturday at 1 and 3 p.m., Children's Garden

Travel each week on a Great Green Adventure. Bring your kids and grandkids to these fun, educational programs in the Children's Garden (included with Children's Garden admission). All Garden members now receive free admission to the Children's Garden every Tuesday. Family-level members and above receive free admission every day. (Upgrade and save! Visit www.mobot.org.) Each month has a different theme, and each week has a different activity.

July: Kids Care for the Earth
August: Power of Plants
September: Five-a-Day the Color Way

Prairie Day happens every other year. Don't miss the family fun!

Follow the Herd to Prairie Day

Saturday, September 20, 10 a.m. to 4 p.m.

It's a fun-filled family event featuring a variety of activities and demonstrations portraying our prairie heritage on the Reserve's 250-acre tall grass prairie. Check out the sod house and teepee, ride a pony, play pioneer games, listen to the music of Crystal and the Codgers, and hike through the prairie with a naturalist. Try your hand at candle making, quilting, flint knapping, and other crafts. Some of the exhibits will have live animals. A few native plant sellers will be on site, as well as a blacksmith working his forge. Hungry visitors will be able to purchase bison burgers, homemade baked goods, and more. Admission is $3 (free for Garden members). *Sponsored by the Shaw Nature Reserve and the Missouri Department of Conservation.*

Featured Native Plant

Indian pink
Spigelia marilandica

Spigelia grows about two feet tall and is native to woodlands in the Ozark region of Missouri. Its magnificent red tubular buds open in early summer to reveal bright yellow star-shaped flowers, attractive to hummingbirds. It is a well-behaved, clump-forming shade perennial that deserves a prominent place in woodland gardens.

SHAW NATURE RESERVE

Hwy. 100 & 44 (exit 253), Gray Summit, MO 63039
phone: (636) 451-3512 • www.shawnature.org

Native Plant School

Sign up now for one or several of these mostly outdoor learning sessions in the Whitmire Wildflower Garden. Classes cover various aspects of native home landscaping and prairie/savanna/wetland reestablishment. All classes take place on Thursdays, 1 to 4 p.m. Fee: $12 ($8 for Garden members). Call (636) 451-3512 to reserve your spot.

July 10 Summer-Blooming Native Perennials
Aug. 21 Prairie & Savanna Reconstruction: Site Prep and Seed Collecting
Sept. 11 Prairie & Savanna Reconstruction: Seeding and Maintenance

Wildflower Identification and Ecology

Thursday, July 24, 6 to 8:30 p.m.
Thursday, August 21, 6 to 8:30 pm
During this intensive wildflower identification workshop with Shaw Nature Reserve biologist James Trager, ID tips are complemented by information on soil and moisture preferences and plants and animals associated in the field with each wildflower species. Each class is $18 ($15 for Garden members).

Dog-Days Butterfly Ramble

Saturday, July 26, 8:30 to 11 a.m.
Over 80 species of butterflies visit Shaw Nature Reserve, and this walking tour is timed to coincide with the season of maximum butterfly abundance. Entomologist James Trager will identify and present interesting facts about each species' natural history as we observe them in their natural habitats. Class fee: $12 ($10 for Garden members).

Photo Exhibition at Bascom House

September 2 through October 31, 10 a.m. to 4 p.m.
Missouri Nature and Environmental Photographers (MoNEP) will exhibit photographs taken at Shaw Nature Reserve throughout the past year.

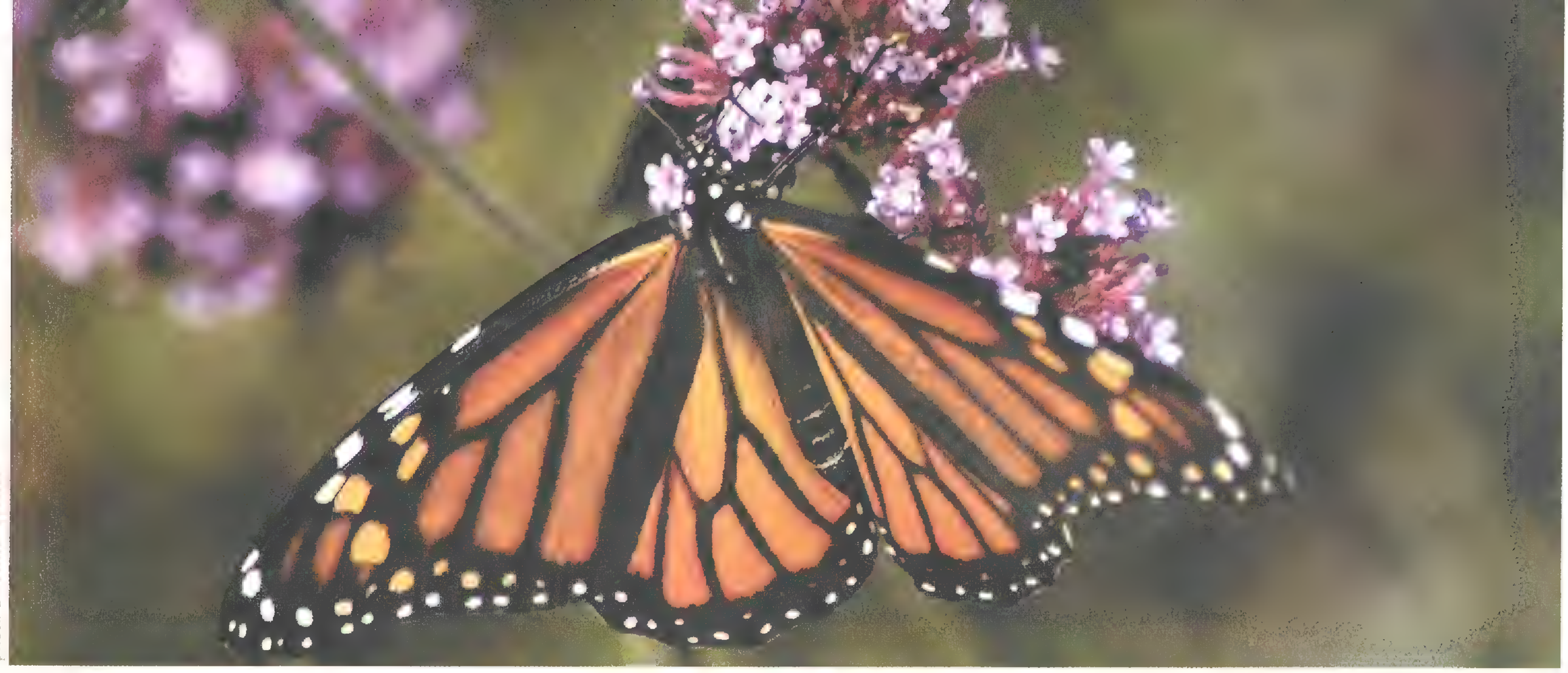


photo by Mary Meyer

Migrating monarchs en route to Mexico stop in Missouri each September

Butterfly House

15193 Olive Blvd., Chesterfield, MO 63017
(636) 530-0076 • www.butterflyhouse.org

Monarchs

by Mark Deering, Curator of Butterflies

A flash of orange and black above the gold, against the white. There! Against the purple. The flowers act as a living backdrop for one of Missouri's largest and most beautiful butterflies: the monarch. It draws the eye with its strong flight, graceful glides, and striking coloration.

Even the black, white, and yellow caterpillar grabs our attention. This larva is voracious and grows quickly to become a graceful green and gold chrysalis. The adult emerges 10–15 days later, taking a few hours to rest and dry, then plunges into adulthood. Adults mate and spend their time feeding and looking for milkweed plants upon which to deposit their eggs.

Later in the year, we can observe another fascinating behavior: the migration. Some monarchs travel more than 2,000 miles to reach their wintering sites in Mexico. Only the last generation of the summer migrates: the adults emerge a little smaller with more fat reserves, and they are not interested in mating. Instead, they save their energy for the long journey ahead, then mate in Mexico or on the journey north in the spring. In Missouri, we start seeing migratory monarchs in September, with virtually all of the monarchs having left by November 1.

The Butterfly House Native Habitat hosts dozens of monarchs in the fall. Our back gardens are a perfect spot to stop for a drink of sugar-rich nectar. Don't miss them this year!

FEATURED FRIEND

The Surinamese Shoemaker
Catonephele orites

Range: Surinam and Brazil
Host plant: *Alchornea costaricensis*

There are many butterflies that are sexually dimorphic, meaning the males and females look different. This small species (about 1.5 inches across) is among the most striking: the male is velvety black with orange coloration, while the females are black with orange spots and white stripes.

Mighty Monarch Fiesta

Saturday, September 13, 6 p.m.
Join us for this fiesta celebration featuring live music, festive attire, food, and drink to bid farewell to the mighty monarch butterflies as they continue their autumn migration to Mexico. Proceeds from this event provide support for education programs and exhibits at the Butterfly House, as well as the ongoing partnership with the El Bosque Nuevo butterfly farm in Costa Rica which helps preserve key areas of tropical rainforest.

Different levels of tickets are available, from the $80 "Wing It" to the $500 "Monarch." Sponsorship opportunities and benefits are also available. Call (314) 577-0291 for more information or to make your reservations. *Sponsored by Novus International, Inc.*

green HOMES & RENEWABLE ENERGY FESTIVAL

Saturday, September 27, 10 a.m. to 6 p.m.

Energy-saving options will fill the street at this year's Green Homes & Renewable Energy Festival! You'll find many ways to save money and protect the earth in your home and daily routines. Festival visitors can explore:

- Solar and wind power demonstrations.
- Green home improvement and homebuilding.
- Native plant and sustainable landscaping.
- Reducing, reusing, recycling, and composting.
- How individuals can help curb climate change.
- Green vendors with fair trade, organic, and other sustainably produced goods.

Artful activities for kids will turn recycled materials into eco-treasures (with grown-up participants welcome too). Healthy food will minimize packaging and other waste and feature locally-produced specialties.

A full day of expert workshops, held at neighboring Cardinal Ritter High School, will cover topics ranging from alternative vehicle fuels to urban farming.

This year's event combines EarthWays Center's seven-year tradition of fall festivals with the Missouri Coalition for the Environment's resources from the Ozark Renewable Energy Festival. "Joining forces for a St. Louis festival is attracting energy expertise from around our state," says the Coalition's Erin Noble, who is coordinating the event with the EarthWays team. "Truly 'going green' requires cooperative efforts," adds Glenda Abney, director of the EarthWays Center. "Through this partnership, our organizations can offer a much wider array of resources for greening your home and lifestyle."

Festival admission and parking are free. A $5 workshop pass will admit visitors to any number of the day's presentations. For a complete festival schedule and other details, visit www.greenhomesstl.org.

EARTHWAYS CENTER

3617 Grandel Square, St. Louis, MO 63108
phone (314) 577-0220 • www.earthwayscenter.org

Learn Green – Live Green

EarthWays Center, a model of green household systems.

Green House Tour

Sunday, September 28, 11 a.m. to 4 p.m.

What makes a home green? You'll get the inside story on this second annual tour of new and rehabbed homes, located around the St. Louis area. The tour begins at EarthWays Center, a renovated Victorian-era house.

Builders, homeowners, and trained volunteers will be on hand in each house to interpret many kinds of green features. Homes on the tour are certified through the LEED, Green Building Initiative, or ENERGY STAR rating systems, which all require independent third-party verification.

Tickets are $15 to ride a clean-fueled tour bus, with lunch provided; $10 tickets for self-guided tour. For more information visit www.greenhomesstl.org.

Tributes *February through April 2008*

A tribute gift to the Garden is a wonderful way to honor family and friends. Tributes of $25 and up are listed in the *Bulletin*. If you have questions regarding giving opportunities at the Garden, please call (314) 577-5118. You can also make a tribute gift online at our website, www.mobot.org.

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Create a legacy

By leaving a bequest to the Garden, you create a legacy that will benefit others for generations to come. If you have already included the Garden in your estate plans, we hope that you will share this information with us. We would like to express our gratitude and welcome you into the Heritage Society. Of course, your wishes for anonymity are respected. Please call (314) 577-9495 for further information, or visit our website at www.mobot.org. Click on Donate, then Planned Giving.

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Mr. and Mrs. John Fox

Mr. Michael Zaccarello
The Wadsworth Family

Mrs. P. Diane Zaltsman
Dr. and Mrs. Ronald D. Gersten

Sophia M. Sachs Butterfly House Tributes & Pavers

To learn more about these opportunities, call (314) 577-0291 or www.butterflyhouse.org.

Tributes and Pavers dedicated at the Sophia M. Sachs Butterfly House in January through April 2008.

Tributes

In Honor of

Chris Hartley
Mr. and Mrs. David E. Crawford, Jr.

In Memory of

Mrs. Corinda Aiken
Dr. James L. Schmidt

Mrs. Paula Dritsch
Mrs. Dottye Buchmueller

Mrs. Gail M. Gaasch
Mr. John Neier

Mrs. Mildred Krebeck
Mr. Kent W. Krebeck

Mr. Harry Samuel Rosenbloom
Dr. and Mrs. Jules M. Snitzer

Pavers

Debbie and Paul Addotta
Ann Suraud and Family

Kay Beermann
Ms. Sharol L. Ensor
and Kay's co-workers

Jan Cicero
Ms. Stacey Slovacek

Lexi and Zoe Clement
Ms. Patricia Baker

GiGi, Mother of Julie Leonard
Laura Meyerkord
Laura Young

Jesse Gill
Mr. and Mrs. Larry York

Ruth Guilliams
Pauline and Harry Oshima

Colleen Karrasch
Ms. Karen B. Bozif

Julie Anne Kelloway
Mr. Gregg W. Goodman

Dorothy G. Knight
Mr. and Mrs. Arthur Knight

Mary Patton
Robert and Shara Patton

Tim Reddy
St. Ferdinand Cub Scouts
and Girl Scouts

Jan Rabushka
Mr. and Mrs. Larry J. Glazer

Members' Entry Court

Bricks from February through April 2008.

Engraved clay bricks and signature bronze bricks are a wonderful way to commemorate any special occasion, as well as final memorials. For additional information regarding the Garden's brick program, please contact the Institutional Advancement Office at (314) 577-0874 or visit www.mobot.org.

40-year veteran horticulturist Steve Wolff.

Employee Spotlight: Steve Wolff

Senior horticulturist Steve Wolff remembers his start date at the Garden very well: it was April 8, 1968, the week before his 18th birthday, and he was in the first draft lottery for the Vietnam War. As luck would have it, the horticulture student from Meramec Community College drew a high number, and so was able to continue in his job at the Garden. He was assigned to assist Charles Kreher, a 30-year staffer in charge of water lilies.

"My first weekend of work, I was told not to let anyone in the greenhouse. I was watering and turned around and there was an elderly gentleman. I told him 'Sir, you're not allowed to be here.' He responded 'Son, I've been working on water lilies longer than you've been alive.' It was George Pring, the Garden's world-renowned expert on water lilies!"

In 2008, Steve celebrates his 40-year anniversary and has followed in his mentor's path as the senior horticulturist in charge of water lilies. He also grows the cascade and single-stem chrysanthemums in the Japanese Garden.

"The grounds were almost like a public park when I started—without many intensively planted areas," says Wolff. "The Garden today has so many things of horticultural interest—it feels like a much bigger garden!"

Steve met his wife Doris at the Garden when she worked as a research assistant. They live in south St. Louis city and have four adult children. Their oldest daughter, Jennifer Wolff, works in the Garden's Education Division.

Signature Bronze Bricks

Alex and Irene Chocinski

Julius and Victoria Podolski

Dave, Cory, Anne, Steve, and Kris Walentik

Walter, Jennie, Willie, Wanda
Ms. Wanda V. Ruesch

Major Darryl D. Fulton
Mr. and Mrs. Darryl D. Fulton

Esther J. Phillips
Estate of Esther J. Phillips

Richard James Rapini Revels
Mr. and Mrs. James E. Revels
Mr. and Mrs. Richard D. Revels

Stephen J. Robin
Mr. Stephen J. Robin

Nancy R. Siwak
Ms. Gianna Jacobson

Col. Arthur D. Thomas and Nancy Crocker Thomas
Mrs. Nancy K. Thomas

Joan L. Timmerman
Ms. Mackenzie E. Siders

Engraved Clay Bricks

Phyllis and Don Caldwell
Dr. Elsa A. Clinger

Olive Van Derhyden
Ms. Helen Van Derhyden

Shirley A. Frost
Mr. and Mrs. Robert E. Frost

John Giesman
Mrs. Carolyn Sherertz

Mike and Agnes Preckshot
Ms. Ellen L. Witte

Barbara Lee Redohl
Mr. and Mrs. Richard Redohl

Charlie and Betty Rohde
Mr. and Mrs. Gregory Rohde

Barbara Lange Scharnhorst
Mrs. Rebecca B. Smith

Jacob M. R. Tuteur
Drs. Peter and Susan Tuteur

July Events

Visit www.mobot.org for the latest information.

photo by Wire Image

Exploring Trees Inside and Out

Through September 1, Brookings Interpretative Center beside the Climatron®

"Exploring Trees Inside and Out" encourages kids of all ages to explore the beauty of the great outdoors through the incredible wonders of trees. Presented by Doubletree Hotels and developed by the Arbor Day Foundation and the Dimensions Educational Research Foundation, this nationally touring exhibit allows children to explore trees in a multi-sensory way. Children will be able to:

- **Sit inside a giant leaf** and be surrounded by the light, sound, and sensation of photosynthesis.
- **Help a seed "grow"** into a young oak inside a huge acorn.
- **Smell scents from various trees**, guess what they might be, then discover just a few of the many products we get from trees.
- **Crawl through a log** and experience it as a habitat for other living things.
- **Hear the sounds of animals** that live in trees, and even become a forest creature in a "green screen" experience that allows children to fly like a bird and soar over the treetops.
- **"Perch" in a larger-than-life bird's nest** and play among the nest's eggs and sticks.

The Garden is the first botanical garden to showcase the "Exploring Trees Inside and Out" traveling exhibit after a successful premiere at the Pacific Science Center in Seattle this spring.

Whitaker Music Festival ☺

Wednesdays through August 13, 7:30 p.m. (free admission after 5 p.m.)

Bring blankets, lawn chairs, and picnic suppers to enjoy during the annual free concert series. Picnicking is allowed on these nights only, and food and drink may also be purchased. *The festival is funded by the Whitaker Foundation, which supports St. Louis arts and parks to promote common heritage, celebrate diversity, and encourage vitality within the community.*

Wings of Wonder ✿ ☺

Thursday, July 10, 11 a.m., Butterfly House

Investigate butterfly behaviors by studying the Tropical Conservatory in the same way a scientist would. Use real butterfly eggs, caterpillars, pupae, and live cockroaches to discuss metamorphosis and anatomy.

photo by Josh Mesker

Members' Family Picnic ✿ ☺

Friday, July 11, 6 to 9 p.m. Cohen Amphitheater, FREE

Last year's inaugural Members' Family Picnic was a huge success, so mark your calendars. Activities include face painting, games, crafts, and more! Enjoy the Schnuck Children's Garden as well. Reservations required. Please call (314) 577-9570 or log on to www.mobot.org/membership.

photo by Diane Wilson

Ivey Selkirk: Antique Roadshow ✿

Friday, July 18, 11 a.m. to 1 p.m. Orthwein Display Hall

Trash or treasure? Find out just what that family heirloom is worth. Specialists from Ivey-Selkirk, the second oldest auction house in the U.S., will be offering verbal appraisals of antiques and collectibles. Limit two items per person.

Happy Birthday, Henry! ☺

Thursday, July 24, 10 a.m. to 3 p.m.

In honor of Garden founder Henry Shaw's 208th birthday, admission to the Garden is free all day. Meet Henry Shaw and tour his home, Tower Grove House. Enjoy old-fashioned entertainment, a Victorian fashion parade, and refreshments (while supplies last). Bring your bike and take a tour of Tower Grove Park during Trailnet's annual "Petal Pedal." Register in the Garden's east parking lot from 10 to 11 a.m.

☺ = fun for families
✿ = members' event

July 2008

average temperature: 80.2
average monthly precipitation: 3.90 in.

What's in bloom: download the podcast at www.gardeningtoolbox.org

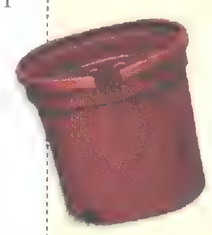
sacred lotus

daylily

mimosa

hibiscus

water lily

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		01 *Seasons of the Heartland* photo exhibition through Aug. 17 Great Green Adventures in the Children's Garden; Tues.-Sat., 10 a.m. to noon; Sat., 1 to 3 p.m. See p. 19.	02 whitaker MUSIC FESTIVAL *Anita Rosamond* 7:30 p.m.	03 niki Nights $☎	04 Independence Day Free admission all day, 9 to 5 p.m.	05
06	07	08	09 whitaker MUSIC FESTIVAL *Javier Mendoza* 7:30 p.m. Butterfly School Academy $☎ BH	10 Members' Day: Wings of Wonder, 11 a.m., BH niki Nights $☎	11 Members' Family Picnic, 6 to 9 p.m., CA Camp Bugaloo: Blossoms $☎ BH	12
13 Camp Bugaloo: Blossoms $☎ BH	14	15 St. Louis Water Gardening Society plant auction	16 whitaker MUSIC FESTIVAL *Kim Massie* 7:30 p.m. Butterfly School Academy $☎ BH	17 niki Nights $☎	18 Members' Day: Ivey Selkirk: Antique Roadshow, 11 a.m. to 1 p.m. Camp Bugaloo: Blossoms $☎ BH	19 Camp Bugaloo: Blossoms ☎ BH Craft Saturday, 11 a.m. and 2 p.m. BH Public Tour Days EWC
20 Camp Bugaloo: Blossoms $☎ BH Public Tour Days EWC	21	22	23 whitaker MUSIC FESTIVAL *Poor People of Paris* 7:30 p.m.	24 Henry Shaw's Birthday Trailnet's Petal Pedal bike ride niki Nights $☎	25	26 Bug Hunt Challenge See p. 22. BH
27	28	29	30 whitaker MUSIC FESTIVAL *FolknBlues-Grass* 7:30 p.m.	31 niki Nights $☎		

PLASTIC POT RECYCLING

through October 31

Beautify the earth while beautifying your yard. Recycle your garden plastic pots and trays. Daily collection through October at the Garden's Monsanto Center at 4500 Shaw Boulevard.

photos by Beth Haines, Brian Mueller, Chris Starbuck, and Leslie Wallace.

August Events

Photo by Josh Monken

Japanese Festival | *Presented by Wachovia*

A celebration of Japanese culture, art, dance, fashion, and food

Labor Day weekend, August 30–31, September 1

Experience the lightning-fast drama of a sumo match. Listen to the thunderous pounding rhythms of taiko drums. Japanese Festival features fashion shows and flower arranging, martial arts and anime screenings. New this year: rakugu, the Japanese art of "sit-down" comedy! Stroll through the Japanese Garden by candlelight. Browse the marketplace for Japanese souvenirs or the food court for green tea ice cream. Visit www.mobot.org to download the complete schedule.

Admission: $10 adults; $7 seniors (65+); $3 Garden members and children (12 and under). Avoid the lines: purchase advance tickets online. Visit www.mobot.org and click on "Tickets." Just enter your member number and the promotion code **henryshaw** to obtain your discount.

Additional sponsorship provided by Novus International, Inc.

Visit www.mobot.org for the latest information.

New Member Orientation ✿

Saturday, August 2, noon, Shoenberg Theater

Learn about events, discounts, classes, and all the benefits of membership. Participants receive Bonus Bloom passes and discounts in Sassafras and the Garden Gate Shop. Bring your friends who are interested in membership too!

Whitaker Music Festival ☺

Wednesdays, August 6 and 13, 7:30 p.m. (free admission after 5 p.m.)

Don't miss the last two free concerts. Bring blankets, lawn chairs, and picnic suppers to enjoy. Picnicking is allowed on these nights only, and food and drink may also be purchased. *The festival is funded by the Whitaker Foundation, which supports St. Louis arts and parks to promote common heritage, celebrate diversity, and encourage vitality within the community.*

Members' Day: Edward L. Bakewell Jr. Ottoman Garden Tour ✿

Thursday, August 7, 1 p.m., Shoenberg Theater and Bakewell Ottoman Garden

Learn how the historical and cultural influences at the height of the Ottoman Empire are represented in the lush and peaceful setting of this unique quarter-acre garden. Docent-led tour immediately follows.

Best Homegrown Tomato Challenge

Saturday, August 16, 9 a.m. to noon, Cohen Amphitheater

Two $2,500 grand prizes will be awarded to the gardeners whose large and small homegrown tomatoes are judged the overall best. Contestant entry forms will be available this summer at local Schnucks, Dierbergs, and Shop 'n Save grocery stores. Registration begins at 9 a.m.; judging at 11:30 a.m. Winners announced at noon. *Sponsored by NatureSweet.*

Shroud of Turin: The Holographic Experience

Monday, August 18, 5:30 p.m., Shoenberg Theater

Presentation by Dr. Avinoam Danin and Dr. Petrus Soons. Dr. Danin is co-author of the *Flora of the Shroud of Turin* and has studied botanical evidence of flowers and a "crown of thorns" on the garment believed by some to be the burial cloth of Jesus of Nazareth. Dr. Soons's three-dimensional holograms of the shroud offer another view. Reception immediately following.

☺ = fun for families
✿ = members' event

Celebrate Membership Weekend

Saturday–Sunday, August 23–24

Celebrate membership with the ZMD cultural institutions: the Saint Louis Art Museum, History Museum, Zoo, and Science Center. Present your Garden membership card and you'll receive discounted or free entry to exhibitions, discounts on food, gifts, and membership!

August 2008

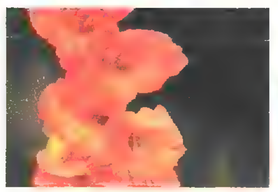
average temperature: 78.25
average monthly precipitation: 2.98 in.

What's in bloom? download the podcast at www.gardenhelp.org

dahlia

canna

butterfly bush


gladiolus

sunflower

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
now through October 31 During the heat of the summer, enjoy three gracious fountains by Niki de Saint Phalle. Don't miss the *Serpent Tree*, *The Three Graces* (left), and *Star Fountain* (inside the Climatron).			**Last day: September 1** Climb inside a large burr oak, explore the inside of an oversized leaf, and crawl through the hollow of a giant log.		01 • *Seasons of the Heartland* photo exhibition through Aug. 17 • Great Green Adventures in the Children's Garden; Tues.–Sat., 10 a.m. to noon; Sat., 1 to 3 p.m. See p. 19.	02 • New Member Orientation, noon, ST • MBG Daylily Society sale • Craft Saturday, BH
03 • Orchid Society of Greater St. Louis plant auction Noon to 5 p.m.	04	05	06 whitaker MUSIC FESTIVAL *Las Vegas revue by Laytham and Holmes* 7:30 p.m.	07 • Members' Day: Bakewell Ottoman Garden Tour, 1 p.m. ST niki Nights $☎	08 • Camp Bugaloo: Bugs $☎ BH	09 • Henry Shaw Cactus Society show and sale
10 • Henry Shaw Cactus Society show and sale • Camp Bugaloo: Bugs $☎ BH	11 • Henry Shaw Cactus Society show and sale	12 • Henry Shaw Cactus Society show and sale	13 • Henry Shaw Cactus Society show and sale whitaker MUSIC FESTIVAL *Alvin Jett & the Phat noiZ* 7:30 p.m.	14 • Henry Shaw Cactus Society show and sale niki Nights $☎	15 • Henry Shaw Cactus Society show and sale	16 • Best Homegrown Tomato Challenge sponsored by NatureSweet • Greater St. Louis Iris Society sale • Henry Shaw Cactus Society show and sale • Public Tour Days EWC
17 • Greater St. Louis Iris Society sale • Henry Shaw Cactus Society show and sale • Public Tour Days EWC	18 • Shroud of Turin presentation, 5:30 p.m., ST	19	20 • Evening hours until 8 p.m.	21 niki Nights $☎	22	23 • Membership Weekend • Greater St. Louis Daylily Association sale
24 • Membership Weekend • Greater St. Louis Daylily Association sale	25	26	27 • Evening hours until 8 p.m.	28 niki Nights $☎	29	30 Japanese Festival $
31 Japanese Festival $						

photos by Carol Gravens, Thomas Pope, Charles Schmidt, Chris Starbuck, and Leslie Wallace.

September Events

Visit www.mobot.org for the latest information.

photo by Heather Marie Osborn

Don't wait another week to enjoy *Niki Nights*! Featuring the gorgeous summer Garden, background music, and self-guided tours of the sculptures transformed by lighting into glittering spectacle. It's "a pure delight," writes David Bonetti in the *St. Louis Post-Dispatch*. Hear the words of Niki and her collaborators with a free audio tour via cell phone.

Admission: adults $7, Garden members $5, and children (12 and under) $3. The Schnuck Children's Garden is open until dusk for no extra charge. Purchase advance tickets online. Visit www.mobot.org and click on "Tickets." Just enter your member number and the promotion code **henryshaw** to obtain your discount.

Sponsored by Anheuser-Busch Companies, Sachs Properties, and the St. Louis Post-Dispatch.

Grandparents' Day ✿ ☺

Sunday, September 7, 1 to 3 p.m., Cohen Amphitheater

Share a fun-filled afternoon with your grandchild in the Doris I. Schnuck Children's Garden. Purchase a photo button, enjoy a snack, and create a botanical craft. Reservations required. Please call (314) 577-9570 or log on to www.mobot.org/membership.

Members' Day: Greenhouse Tour ✿

Friday, September 19, 11 a.m., Shoenberg Theater and Greenhouse Complex

Learn what it takes to prepare and maintain the beauty of award-winning horticultural displays. Take a tour behind the scenes of the Garden's greenhouse complex.

Register now for Fall Strollerobics ☺

Join a certified instructor on a low-impact fitness walk through the Garden and discover areas that are most interesting to young children in strollers. Sessions start in September and continue for eight weeks. Choice of weekday morning one-hour sessions at 9:30 a.m. Fee for eight sessions is $55 ($50 for Garden members). Limited class size. Call (314) 577-9506 during weekday business hours.

☺ = fun for families
✿ = members' event

Register now for Fall Early Childhood Classes ☺

Explore the amazing world of nature with your child. Little Sprouts and Garden Buds are 90-minute sessions for preschoolers that include a walk in the Garden or Shaw Nature Reserve, an activity, song or story, and a snack. Garden Kids is for ages six through eight. At Oaks and Acorns, make a botanical craft project with your grandchild. Fee. Limited class size. Advance registration required. Go to www.mobot.org; click on Education. To register, call (314) 577-9506 during weekday business hours.

photo by Brian Mueller

Best of Missouri Market ☺

Saturday–Sunday, October 4–5, 9 a.m. to 5 p.m.

The 17th annual Best of Missouri Market® returns with over 30 new vendors and lots of returning familiar favorites. Fresh food, family fun, and plenty of finds for your holiday shopping list—the best from all over the state, found together in St. Louis, only at the Market!

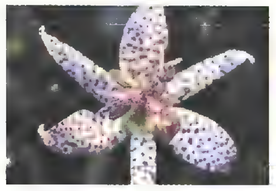
✿ Members enjoy early bird shopping privileges and refreshments on Saturday starting at 7 a.m. Visit www.mobot.org for complete

September
2008

average temperature: 70.2
average monthly precipitation: 2.96 in.

What's in bloom?

download the podcast at www.gardeninghelp.org


toad lily

blood flower

coneflower

sneezeweed

fountain grass

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01 Labor Day Japanese Festival 2008 $ LAST DAY: Exploring Trees Inside and Out	02 Ramadan Begins Great Green Adventures in the Children's Garden; Tues.–Sat., 10 a.m. to noon; Sat., 1 to 3 p.m. See p. 19.	03	04 niki Nights $☎	05	06 Gateway West Gesneriad Society show and sale
07 Grandparents' Day Grandparents' Day, 1 to 3 p.m., CA Gateway West Gesneriad Society show and sale	08	09	10	11 niki Nights $☎	12	13 St. Louis Carnivorous Plant Society show and sale Mighty Monarch Fiesta $☎ BH See p. 21.
14	15	16	17	18 Last 2 Weeks niki Nights $☎	19 Members' Day: Greenhouse Tour, 11 a.m., ST Fabric art by Ann Cove through Nov. 14 Heirloom Bulb Sale GGS	20 Greater St. Louis Daffodil Society sale Prairie Day SNR Craft Saturday BH Heirloom Bulb Sale GGS
21 Greater St. Louis Daffodil Society sale Heirloom Bulb Sale. GGS	22	23	24	25 Last Night niki Nights $☎	26	27 Green Homes and Renewable Energy Festival. EWC. p. 22. Rhapsody in Bloom by KFUO. 10 a.m. to 3 p.m.
28 Green House Tour EWC		30 Rosh Hashanah	**PLASTIC POT RECYCLING** *through October 31*			

Missouri Botanical Garden Library
3 1753 00351 8500

Key

(All events take place at the Garden unless otherwise noted.)

CA = Cohen amphitheater
CL = Climatron lawn
GGS = Garden Gate Shop in RC
JE = Jordan Education Wing in RC
KC = Kemper Center for Home Gardening
SP = Spink Pavilion
RC = Ridgway Center
SS = Sassafras, the Garden's café in RC
ST = Shoenberg Theater in RC

Off-site locations:
BH = Butterfly House, (636) 530-0076
EWC = EarthWays Center, (314) 577-0220
LS = Little Shop Around the Corner, (314) 577-0891
SNR = Shaw Nature Reserve, (636) 451-3512

Members-only event
☎ Reservations required
$ Fee

photos by Becky Homan, Brian Mueller, Tammy Palmier, John Smelser, and Leslie Wallace.

Worried about highway construction?
The Garden is...

conveniently located off

For latest directions, visit www.mobot.org.

General information

Hours

The Garden is open every day except December 25, 9 a.m. to 5 p.m. Parking is free.

General admission*

Adults age 13–64 ..... $8
Members and children 12 and under .... free

St. Louis City and County visitors, with proof of residency, receive a discount on admission and free admittance on Wednesday and Saturday mornings until noon (unless special event pricing applies).

**Special events require an additional fee.*

Phone numbers

General Garden ..... (314) 577-5100
Education ..... (314) 577-5140
Group Tours ..... (314) 577-0275
Membership ..... (314) 577-5118
Institutional Advancement .... (314) 577-9500
Hort. Answer Service ..... (314) 577-5143
Volunteer ..... (314) 577-5187
24-Hour Event Hotline ..... (314) 577-9400

Off-site locations

Butterfly House ..... (636) 530-0076
EarthWays Center ..... (314) 577-0220
Shaw Nature Reserve ..... (636) 451-3512

Mushrooms of all sizes and colors a
popping up at the Garden Gate She
And who knows, maybe they will li
a gnome to your garden!

GARDEN GATE SHOP
(314) 577-5137
9 a.m. to 5:30 p.m. daily.
Members 10% off every day,
20% off on members' days.

LITTLE SHOP AROUND THE CORNER
(314) 577-0891
10 a.m. to 4 p.m. Tues
Members enjoy discou
Donations welcome

sassafras
(314) 577-0290
Now booking 2009
parties and events
at the Garden.

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Credits

Editor: Elizabeth McNulty
Designer: Ellen Flesch
Cover photo: *La Cabeza* by Niki de Saint Phalle. Photo by Heather Marie Osborn.
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The *Bulletin* is a benefit of Garden membership.

The BULLETIN (ISSN 0026-6507) is published quarterly by the Missouri Botanical Garden, 4344 Shaw Blvd, St. Louis, MO 63110. Periodicals postage paid at St. Louis, MO.

Postmaster: Please send address changes to: *Bulletin*, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299.

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MISSOURI BOTANICAL GARDEN

bulletin

Fall 2008 Vol. 96, No. 4 www.mobot.org

GARDENLAND EXPRESS

Opens November 26!

President's Comment

In 1859, Henry Shaw opened the Missouri Botanical Garden "for all time for the public good." Shaw envisioned a place of great beauty, where the "instruction of pupils shall be attended to," and where visitors could contemplate the "wisdom and goodness of God as shown in the growth of flowers, fruits, and other products of the vegetable kingdom."

One hundred and fifty years later, the Garden is a beloved and beautiful oasis for beleaguered urbanites, with seventy-nine acres of magnificent gardens, historic conservatories, and rare collections of plants. It is also a sanctuary for the plants themselves, the natural habitats of which are shrinking at alarming rates. In this new era of global climate change, the Garden has outgrown Shaw's old stone walls to become a world leader in botanical science, conservation, and the protection of biodiversity, with operations in thirty-six countries around the globe.

The Missouri Botanical Garden celebrates our sesquicentennial—our 150th anniversary—in 2009. This fall, we celebrate the launch of the first major publication in 20 years on the Garden's history. *The Missouri Botanical Garden: Green for 150 Years* chronicles the rise of Henry Shaw and the institution he created from inception through dynamic present. On Thursday, October 16, members are invited to the presentation of nationally renowned garden photographer Ian Adams, who shot the gorgeous contemporary images in the book.

While we celebrate our past, we also look forward to the next 150 years. The work of Henry Shaw has been carried on by generations of trustees, donors, staff, volunteers, and friends. We owe our many successes to the vision and dedication of key individuals, such as Nora Stern and Ellen Dubinsky, founders of the annual Best of Missouri Market. How wonderful that they were honored this year with the William T. Kemper Foundation—Commerce Bank Trustee Community Service Award!

This October, the Garden will host botanists from around the world at our annual systematics symposium, followed in November by a new conference dedicated to ethnobotany. As we approach Thanksgiving and the holidays, in a spirit of gratitude for Shaw's vision and legacy, may we all take action together to leave the world in a better condition for future generations.

Peter H. Raven

Dr. Peter H. Raven, *President*

To discover and share knowledge about plants and their environment, in order to preserve and enrich life.

—mission of the Missouri Botanical Garden

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Table of Contents

8–9 Science & Conservation
Herbarium Reaches Six Million Specimens

10–11 Home Gardening
The Green Menace—Emerald Ash Borers Arrive

14–15 Education
Horticulture Helps Children with Autism

MISSOURI BOTANICAL

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GARDEN LIBRARY

Departments

From the President 2
News 4–6
History 7
In Your Garden Now 12–13
Kidstuff 16
Green Living 17
Making a Difference 18–19
Family of Attractions 20 22
Tributes 23–25
Events & Calendar 26–31

Win 10% off in the Garden Gate Shop

We want your feedback on the calendar and events section of the Bulletin. Currently, these pages include an actual calendar page for each month. They are printed sideways for easy hanging. Is this format helpful? Does it distract you? Do you think it allows adequate coverage of events at the Garden? The first 25 readers who send in their feedback will receive a coupon for 10% off any one item, in addition to the standard member discount, in the Garden Gate Shop. Write to the editor at: Elizabeth.McNulty@mobot.org.

Sustainability Statement

The Missouri Botanical Garden strives to make the most sustainable choices for the future of people, plants, and the planet. The Missouri Botanical Garden *Bulletin* is printed on paper containing 100% post-consumer recycled content, that is, paper that you might have placed in the recycle bin in your home or office this year. It is manufactured using wind power, a renewable energy source. We print locally, so there is no long-haul transportation, and we're reinvesting in our community. Why do we print at all? Why not go online? Because paper still has a place: in your purse or briefcase, on a plane, during lunch in the park. That's why we work hard to choose the most environmentally responsible paper around. So enjoy your *Bulletin* in good conscience—and once you've read it, please be sure to recycle it or pass it on to a friend.

News

Doris and David B. Lichtenstein with their family at the dedication of the new Doris Waters Harris Lichtenstein Victorian District.

New Victorian District Dedicated

On June 13, the Garden formally dedicated the new Doris Waters Harris Lichtenstein Victorian District. Visitors to the area enjoyed lemonade and cookies and received a commemorative fan while exploring the revamped district with actors dressed in Victorian costume. The new area unifies and enhances several gardens and Victorian-era buildings. "The area has been transformed into the kind of Victorian promenade and showplace that Henry Shaw would have loved," says Dr. Peter Raven, president of the Garden.

Improvements were made thanks to a generous gift of the David B. Lichtenstein Foundation. Graceful columns mark the north and south entrances. A new pincushion garden of annual plants and succulents that require little water grows along the path south of the Museum Building. Many paths have been resurfaced in brick, aggregate and other historically appropriate materials, embedded with medallions honoring the Lichtenstein's gift. Some paths were redirected for more scenic views and new lighting was added. Construction began last summer.

Many areas encompassed by the new district already reflect Shaw's Victorian style, thanks to the generosity of donors throughout the years: the Kresko Family Victorian Garden, the Kaeser Memorial Maze, the Piper Observatory, and the St. Louis Herb Society Herb Garden.

Greensfelder Medal Awarded to Dr. Brent Elliott

Dr. Brent Elliot receives the Greensfelder Medal presented by Dr. Peter Raven.

The Garden has awarded the 2008 Greensfelder Medal to Dr. Brent Elliott, librarian and archivist at the Royal Horticultural Society Lindley Library in London. The Albert P. and Blanche Y. Greensfelder Medal was established in 1980. It honors individuals who have made significant contributions to landscape, garden and park planning, and design for urban improvement. The 2008 award was presented at the dedication of the Doris Waters Harris Lichtenstein Victorian District at the Garden on June 13. Dr. Elliott is a renowned authority on Victorian gardens. He collaborated on the landscape design and interpretation of the new Victorian District.

In memoriam:

Adelaide "Jabber" Cherbonnier | 1926–2008

Adelaide Cherbonnier

Adelaide "Jabber" Cherbonnier, a staunch supporter of the arts in St. Louis and long-time friend of the Garden, died February 23, 2008. Her death was caused by complications related to a stroke she suffered in 2004. Ms. Cherbonnier spent many years as a real estate agent with Edward L. Bakewell Realtors and co-founded the Arts and Education Council of St. Louis in 1963. She spent her winter months on Captiva Island, Florida, where she was a strong supporter of the Clinic for the Rehabilitation of Wildlife (CROW). She was past president of the St. Louis Junior League and served on several local boards, including those of Forest Park Forever and Illinois Foundation for Dance.

Her volunteer work and commitment to the Garden began in the early 1980s. With her father, Edward G. Cherbonnier, she created a memorial for her mother with a gift to the English Woodland Garden. Ms. Cherbonnier later helped to renovate the pathways to make it accessible to people with disabilities. The Garden will install a copper swing in the English Woodland Garden in memory of Ms. Cherbonnier.

S. Lee Kling | 1928–2008

S. Lee Kling

S. Lee Kling, a philanthropist, businessman, and influential Democrat, died July 26, 2008, in his home. The cause of death was lung cancer. Mr. Kling was chairman of the Kling Co., an insurance, consulting, and investment firm. His political influence was remarkable and his professional accomplishments numerous, but it was Mr. Kling's philanthropic spirit and commitment to preservation and restoration that led him to a leadership role at the Missouri Botanical Garden.

His involvement with the Garden began in the mid-1980s with his support of the Shaw Nature Reserve in Gray Summit. At the time, Mr. Kling's home and farm were adjacent to the Reserve. He supported projects such as wetlands restoration and the planting of prairie grasses. He also served on the Reserve's Advisory Board and hosted several events at the Reserve to enlist the support of associates and friends. His steadfast promotion helped secure state funding for both conservation work and road improvements in Gray Summit. Mr. Kling became a member of the Garden's Board of Trustees in 2004. He served the board in several capacities, including seeking support from other business leaders on behalf of the Garden.

Sassafras First Certified Green Restaurant™ in Missouri

The Missouri Botanical Garden's cafe, Sassafras, has become the first Certified Green Restaurant™ in the state of Missouri. The official designation was made by the Green Restaurant Association (GRA), a national nonprofit organization whose mission is "to create an ecologically sustainable restaurant industry."

"The Garden takes pride in this certification, which is another way we stand behind our mission to preserve the planet," says Garden President Dr. Peter Raven. "As stewards of the Earth, we must continually seek out ways to become more environmentally friendly in all of our practices."

The restaurant was remodeled in early 2005 to incorporate environmentally friendly materials and principles. Tabletops and divider walls are made of recycled paper products and renewable agricultural resources. Areas around the service counter are made of natural cork. Ceiling tiles contain over 70-percent recycled content. Natural light is maximized through skylights and windows. Ceiling lights use energy efficient fluorescent bulbs, and accent lighting uses compact fluorescent bulbs (CFLs).

To become certified, the GRA performed a thorough evaluation of existing practices and made recommendations for the Garden and Catering St. Louis, which operates Sassafras, to improve sustainability even further. The Garden is required to make four improvements per year to maintain standing as a Certified Green Restaurant.

"The café at the Missouri Botanical Garden joins over 260 restaurants nationwide in making a commitment to sustainable practices," says GRA President Michael Oshman. "Sassafras already had in place many of the kinds of measures we recommend and has committed to doing more."

photo by Justin Visnesky

Sassafras, newly named Missouri's first Certified Green Restaurant™, features green design as well as sustainable practice.

Visitors will find tips and advice on table displays and wall signs. Napkins and menus are now made from 90- and 100-percent post-consumer recycled paper with no chlorine. Food is served on washable dishware with real cutlery (less disposable waste). Aerators installed on kitchen sink equipment help to conserve water. Sassafras recycles all paper, glass, plastic, aluminum, steel, cardboard, and more. Visitors are also encouraged to recycle waste in marked bins at the restaurant entrance.

"The Garden recognizes the need to continually learn about and incorporate sustainable practices," said Jean Ponzi, program manager at the EarthWays Center, a division of the Garden. "Going green is a process. We're striving for ways to grow more sustainable in all that we do, especially in our service to visitors."

photo by Justin Visnesky

Lightning damage on a bald cypress near the Climatron. The Garden needs your help to protect these trees.

Lightning Strikes Historic Bald Cypress

In the early morning hours of Tuesday, May 27, lightning struck one of the bald cypresses (*Taxodium distichum*) in the Garden's central axis. The Garden's public information officer, Karen Hagenow, was walking through the Garden en route to an early-morning, live-media satellite feed when the sky flashed pink and she heard a deafening roar. She made it to her appointment unscathed; however, the tree was damaged. "A lightning strike will certainly shorten the tree's life," says Vice-President of Horticulture James Cocos, "but the tree poses no danger and we will enjoy it as long as we can while monitoring its health." Currently, 28 trees on Garden grounds are protected from lightning strikes. Sixty-four more trees have been identified for protection. To help protect these trees, please consider a donation to the Henry Shaw Fund. Call (314) 577-9495.

The new medical clinic in Mahabo, Madagascar, helps alleviate the poverty that drives local people to destroy the forest.

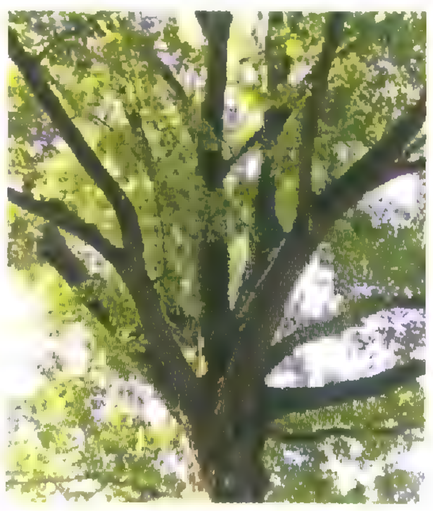
Garden Helps Open Clinic in Madagascar

A littoral forest is a humid forest growing on old sand dunes. The littoral forest of Madagascar has a very diverse plant life with many species that occur nowhere else in the world. It is extremely threatened by exploitation for timber and cultivation, and is under-represented in the country's protected-area network.

The Agnalazaha Forest in the commune of Mahabo-Manaivo is one of the largest remaining fragments of this vegetation type and thus a priority for the Garden's Madagascar site-based conservation program. Garden staff met with the community and learned that while inhabitants knew their exploitation of the forest was damaging it, they were forced to do so because of poverty. When asked what might improve their standard of living, so that they did not have to destroy the forest, inhabitants requested a new medical clinic. By honoring this commitment, the Garden has won the trust of local communities, thereby enabling us to work closely with them to conserve the rare Agnalazaha forest and all the lovely and rare plants and animals that survive within its limits.

Award-Winning Oaks

Earlier this year, the American Public Gardens Association certified the Garden as a partner in the first multisite Quercus (oak) collection to achieve official status in the North American Plant Collections Consortium (NAPCC). The Garden joins 14 other institutions nationwide which will collaborate to strengthen their unified collection and preserve plant diversity of oaks. They will make tree data and germplasm (plant genetic material) available to each other for evaluation, selection, breeding, and various other research purposes. The Garden's collection includes 385 individual oak trees representing 48 different taxa, or species.



This Shumard oak (Quercus shumardi) is one of the 45 different oak species at the Garden, which are part of the NAPCC oak collection.

"The Missouri Botanical Garden stands among a prestigious group of gardens and arboreta that have committed themselves to the conservation and care of specific plant collections curated at the highest professional level," says Pamela Allenstein, NAPCC coordinator.

Dr. Nancy Turner

William L. Brown Award Given to Dr. Nancy Turner

The William L. Brown Center for Plant Genetic Resources has awarded the 2008 William L. Brown Award for Excellence to Dr. Nancy Turner of the University of Victoria in British Columbia, Canada. Dr. Turner is an ethnobotanist who has devoted her career to the study and preservation of native North American plant genetic resources, especially those of the indigenous peoples of the northwest. The Garden's William L. Brown Center presents the William L. Brown Award for Excellence biannually in recognition of the outstanding contributions of an individual in the field of genetic resource conservation and use. The award is made possible through a generous endowment from the Sehgal Family Foundation, in cooperation with the family of Dr. William L. Brown.

Ethnobotany Symposium and Book Signing

Friday–Saturday, November 7–8

The Garden's William L. Brown Center has announced a two-day symposium on *Ethnobotany: The Integration of Science and Traditional Knowledge*. Brown Award recipient Dr. Nancy Turner will deliver the keynote address. In conjunction with the Brown Symposium, the Garden Gate Shop will host a multi-author ethnobotany book signing on Friday, November 7, from 5:30 to 6:30 p.m. A reception open to the public will be hosted by Island Press in honor of Dr. Gary Nabhan's new book *Where Our Food Comes From: Retracing Nikolay Vavilov's Quest to End Famine*. Other ethnobotany authors will sign their books including:

- *Ethnobotany* by Dr. Gary Martin and Dr. Cath Cotton
- *Footprints in the Forest* by Dr. William Balee
- *The Earth's Blanket: Traditional Teachings for Sustainable Living* by Dr. Nancy Turner
- *Home Gardens and Agrobiodiversity* by Pablo B. Eyzaguirre
- *Magic and Medicinal Flora of Peru* by Rainer Bussmann and Douglas Sharon

History

John Feugh on the back stairs of Tower Grove House in 1930. Feugh worked as Shaw's personal assistant in Shaw's final years.

First opened to the public in 1859, the Missouri Botanical Garden is a National Historic Landmark and the oldest botanical garden in continuous operation in the nation. The year 2009 will mark the Garden's 150th anniversary, or sesquicentennial (from the Latin sesqui, *one-and-a-half, and* centum, *hundred). Throughout 2008 and 2009, we will explore the people, stories, and places that make up the Garden's rich history.*

John Feugh

Personal Assistant to Henry Shaw

Henry Shaw, as a person, is a source of interest to everyone who visits his extraordinary garden. Having no wife or children, and leaving very few personal papers, the private side of Shaw's life remains something of a mystery. Thus, we are lucky to have the account of one person who knew him well in his old age: John Feugh, Shaw's personal assistant for the last ten years of his life.

Hired in 1879, Feugh lived in a house on Garden grounds for 35 years. He was interviewed about his memories of Henry Shaw by reporter Walter J. Monaghan for an article published in the *St. Louis Globe-Democrat Sunday Magazine* on October 9, 1932. The story of how he came to be hired and stay with Shaw gives us a glimpse of Shaw's values.

At age 28, Feugh arrived in St. Louis from rural Georgia, penniless and looking for work. He spent his first night with a woman who took in the homeless. She suggested that he see Shaw about a job at his city house at Seventh and Locust streets.

As written in the *Globe-Democrat,* Feugh recounts their conversation: "Mister Shaw asked me where I was from, and when I told him, he asked me if I could read and write. He was surprised when I told him I could because then Negro boys from the South who had any education at all were rare." Shaw hired him and he became Shaw's personal messenger.

When Shaw moved permanently to Tower Grove House, John Feugh moved there as well, serving as the farm foreman. He described what he did at the country estate: "A great many of these big trees you see here I hauled in my wagon behind a pair of Mister Shaw's frisky bays from the depot to the places where they were to be set out... I have planted them here myself."

Following Shaw's death in 1889, Feugh continued to live on the grounds and had an office in Tower Grove House as caretaker of "Shaw's Museum." He died on November 30, 1939, at age 88. Feugh maintained there were three great Americans—George Washington, Abraham Lincoln, and Henry Shaw. And he would never discuss anything that might "touch too deeply the purely personal side" of Shaw's life.

The six millionth specimen, a new species of philodendron, is so large that it requires seven herbarium sheets for a single leaf. From left: Dr. Robert Magill, vice president of science and conservation; Dr. Thomas Croat, discoverer of the new species; and Dr. James Solomon, curator of the herbarium.

The Six Million Specimen Herbarium

The Garden's herbarium is the second largest in the Western Hemisphere—and among the fastest growing!

The Missouri Botanical Garden operates one of the largest and fastest growing herbaria in the world. With the addition of a specimen of *Anthurium centimillesimum*, a gigantic new aroid species from Ecuador, the Garden's permanent collection of pressed and dried plant specimens has reached a milestone of six million specimens.

A herbarium is essentially a "library" of plant specimens. The Garden's herbarium includes 5.5 million vascular plants (flowering plants, ferns, and conifers). The Garden's bryophyte collection (mosses, liverworts, and hornworts), at 500,000 specimens, is the third largest of its kind in the world.

"The importance of these libraries of plants cannot be overstated," says Dr. Robert Magill, the Garden's vice president of science and conservation. "There are an estimated 300,000 recognized, named species of plants, with perhaps an additional 100,000 species still to be discovered. Herbaria are vital resources that allow botanists to organize information about this enormous diversity of plant life. Without a system of documentation that includes actual samples of the plants, it would be nearly impossible to make conclusions about the roles and relationships of plants, or to even verify the discovery of a species new to science."

Plant specimens are collected in the wild, pressed in newspaper folds, and dried in a wooden-framed plant press before being sent to the Garden's herbarium for study and identification. At the Garden, newly received specimens are counted, recorded, and treated by freezing to kill insects that might eat them. Permanent labels are prepared from the collector's field catalog for each specimen. The label contains information on where and when the specimen was gathered, by whom, and any features about the plant that are not readily apparent from the pressed specimen. The specimens are then studied by plant taxonomists with specialized knowledge of the group to which the plant in question belongs. Taxonomists will either identify the specimens, or recognize them as new to science. One specimen from each collection is mounted and added to the Garden's herbarium. Any duplicates are distributed to other herbaria in exchange for specimens from their areas of activity; the Garden exchanges specimens with about 400 other herbaria worldwide.

photo by Erin Whitson

photo courtesy Thomas Croat

Plant mounter Anna Spencer sews dried plant material into place on acid-free archival herbarium sheets. Above right: The new anthurium discovered in Ecuador is named Anthurium centimillesimum *because it is Dr. Croat's personal 100,000th collection, a rare accomplishment. (Dr. Croat, pictured here, is six feet two inches tall.)*

Join the Celebration!

Friday, October 17, 2 p.m., Monsanto Center (4500 Shaw Blvd.)
Join Mayor Francis Slay and Dr. Peter Raven at a ceremony to honor the 6 millionth addition to the herbarium. Meet Dr. Thomas Croat. Light refreshments served.

Number Six Million

The Missouri Botanical Garden's six millionth herbarium specimen was collected in late 2007 by Dr. Thomas Croat, P. A. Schulz Curator of Botany. Croat discovered *Anthurium centimillesimum* while on a collecting trip in Ecuador's Pichincha province, in an area of tropical rain forest. The giant plant was found growing on a steep bank next to a pasture.

"At first I considered it impossible that this species was new, simply because the area was previously well collected," says Croat. "Still, after returning to the Garden, I went through all the existing species and none came close to this *Anthurium*."

Croat has been collecting plant specimens in the wild for over 41 years as part of the Garden's science and conservation team. *Anthurium centimillesimum* is the 100,000th collection made by Croat, making him a member of an elite group that includes only a handful of scientists in history.

Garden scientists conduct field research in 36 countries on six continents around the globe in an effort to collect, identify, and preserve plant specimens. Researchers focus their efforts on areas of high biological diversity, with the goal of characterizing and grouping the plant life they discover. Plants collected in the wild and accessioned to the herbarium form the basis of scholarly publications, including floras, which document the known information about the plant species found in a particular geographic region. These taxonomic tools allow the Garden's wealth of plant information to be readily accessed by a wide variety of users throughout the worldwide scientific community.

"A fundamental part of our mission is to characterize, describe, and name the patterns of diversity found in the plant world," says Dr. James Solomon, herbarium curator. "We then build the tools that allow people to learn about, understand, and communicate about that diversity. In order to find medicines or sustainably manage lands, you have to be able to recognize and know the species involved. Our work is helping to synthesize knowledge from around the globe to make this possible."

For more information on the Missouri Botanical Garden's science and conservation work, visit www.mobot.org/plantscience.

By the Numbers

There are approximately 3,200 herbaria in the world. The average size is 100,000 specimens. The Missouri Botanical Garden herbarium holds 6 million. The stats:

- Herbarium ranking in the Western Hemisphere: 2nd largest
- Ranking in the world: 5th largest
- Growth rate: 123,000 new specimens added per year
- The Garden's herbarium includes specimens collected by Charles Darwin and Joseph Banks, who was on Captain James Cook's first voyage around the world (1768–71).
- The Missouri Botanical Garden's plant "library" has over one million more mounted specimens than the St. Louis Public Library has books.

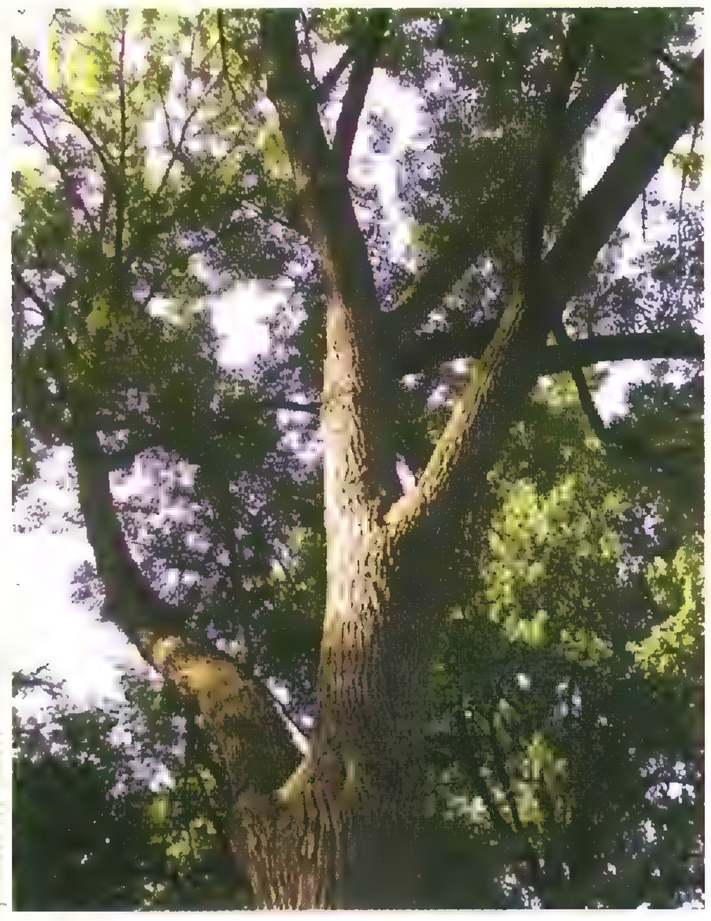
*The Emerald Ash Borer (*Agrilus planipennis*) arrived from Asia in packing materials and is decimating ash trees in nine states.*

Emerald Ash Borer is Bad News for Ash Trees

by Chip Tynan, Garden Answer Man

As the *St. Louis Post-Dispatch* reported in August, the emerald ash borer (EAB) has recently been found in Wayne County in southeastern Missouri. For now, no additional EABs have been found elsewhere in the state, but it is only a matter of time. They have been found in Illinois for over two years.

Aptly dubbed the "green menace," the EAB is the greatest exotic invasive threat to American forests since the introductions of Dutch elm disease and chestnut blight. Emerald ash borer (*Agrilus planipennis)* is an exotic beetle that most likely arrived in North America via wood packing materials in shipping containers from Asia. It was discovered in southeastern Michigan near Detroit in the summer of 2002. Since then, it has spread to nine additional states and has been responsible for the death of tens of millions of ash trees. No native ash species are resistant, and the EAB attacks all tree sizes from saplings to mature trees. Infested trees typically die within one to three years.



*A majestic native Missouri blue ash (*Fraxinus quadrangulata*) near the Jenkins Daylily Garden. No native ash species can resist the Emerald Ash Borer, which has now been found in southeastern Missouri.*

Symptoms of decline in infested trees typically occur in the upper canopy first. Sprouting of new branches from the trunk and lower limbs often accompanies advanced decline. Woodpeckers are highly attracted to EAB larvae tunneling beneath the bark, and unusual activity of woodpeckers in the upper branches of ash trees could be an early warning sign of a developing infestation.

At the present time, no effective means have been found to curtail the spread of this pest. If this trend continues unchecked, it is presumed that all native species of ash will likely be destroyed in North America. In anticipation of this eventuality, Missouri Botanical Garden personnel are joining other conservation agencies in collecting seed of native ash to save germplasm for reestablishing ash trees at some future time. To learn more, visit the National Resources Conservation Service website: www.mi.nrcs.usda.gov/programs/pmc.html.

Ash trees make up about three percent of the state's forest, according to conservation officials. However, here in St. Louis, that number is much higher: ash trees make up 14 percent of street trees and 21 percent of park trees. Percentages are even greater in Forest Park and on the Arch grounds.

What can homeowners do?

- Learn to identify the EAB. Adults are an iridescent green color, but their small size (approximately one-half inch) and slender profile makes them easy to miss. Also, there are several other iridescent green "look-alike" insects found in Missouri. Download the helpful identification sheet from the Missouri Department of Conservation's website to get started: mdc4.mdc.mo.gov/Documents/11100.pdf.

- Maintain the health and vigor of existing trees. Watering during dry spells and periodic fertilization. Ash trees are susceptible to many other insect, disease, and environmental problems (see www.forestpests.org/ash). Minimizing these other problems is key to reducing overall stress. Studies show that EAB is highly attracted to stressed, open-grown ash trees. However, unlike other species of boring insects, it readily attacks healthy trees, regardless of location.

- Do not plant any new ash trees. Most reputable nurseries no longer sell them. Utilize other tree species and create diverse plantings so your landscape contains no more than 10 percent of any one single species.

- Know about, but do not depend on, products. No product or method of treatment has proved to be 100 percent effective against emerald ash borer. Insecticides currently available work on a preventative basis only and do not control larvae already tunneling inside the tree. The University of Illinois Extension's "insecticidal" fact sheet can be found at www.ipm.edu/pubs/eab_insecticidal_management.pdf.

- Develop a relationship with a qualified tree care company. Newer products are currently under study. When they become available, they will likely be for professional use only. Many firms publish newsletters to keep their customers informed of new developments in the science and industry of tree care. For example, see the website of the St. Louis Horticultural Co-op on St. Louis certified arborists: www.hortco-op.org/index.cfm?fuseaction=members.arborist.

- Do not transport firewood. Emerald ash borer has been able to spread at such an alarming rate primarily due to the transportation of firewood from infested areas. Use firewood from local sources only, whether for home use or when camping, and don't move wood from one location to another unless you're absolutely certain it's not ash, or you're absolutely sure where the wood came from.

Find additional information:

The Garden's website:
www.mobot.org/gardeninghelp/plantfinder/IPM.asp?code=315.

The University of Missouri Extension:
snr.missouri.edu/forestry/extension/emeraldash.php

The Emerald Ash Borer website, a multistate effort with the latest information: www.emeraldashborer.info.

A formal garden at Chatsworth, where Garden founder Henry Shaw first imagined creating his own botanical garden.

Members' Travel: Gardens of England

May 16–25, 2009

The Missouri Botanical Garden invites you to experience England's greatest gardens during a luxurious 10-day trip next May. Stroll through places that shaped Henry Shaw's vision for the Missouri Botanical Garden, such as the Duke of Devonshire's country estate of Chatsworth, and the Royal Botanic Gardens, Kew. Visit the world-famous annual Chelsea Flower Show and famous private gardens such as Exbury, Hidcote, and Bowood. Our tour will be accompanied by Englishman and former Missouri Botanical Garden director of horticulture, John Elsley, who designed the English Woodland Garden. For more information, visit the pages at the Garden's website: www.mobot.org/UKtrip. Or call the Garden's Institutional Advancement Office at (314) 577-9500.

Sign Up Now for Fall Classes!

Members enjoy discounts on all classes. Visit www.mobot.org/gardenhelp to review the full line-up of classes on gardening and plant care, as well as arts, crafts, cooking, tours, and more! Register online or call (314) 577-9441 to request a catalog.

What to do in your garden now...

clip and save

photo by Rob Routenger

October

all month

- ❑ Plant spring bulbs among hostas, ferns, daylilies, or ground covers. As these plants grow they will hide the dying bulb foliage.
- ❑ Plant container-grown and balled-and-burlapped trees and shrubs now. Loosen the soil in an area five times the diameter of the root ball before planting. Mulch well after watering. Continue watering, especially evergreens if soils are dry.
- ❑ Store apples in a cool basement in old plastic sacks that have been perforated for good circulation.
- ❑ Sow cover crops such as winter rye after crops are harvested.

week 1

- ❑ Christmas cactus, potted azaleas, and kalanchoe may be left outdoors until night temperatures drop to 40° F.
- ❑ Continue harvesting tender crops such as winter squash and pumpkins before frost. For best storage quality, leave an inch or two of stem on each fruit: Dig sweet potatoes before a bad freeze.

week 2

- ❑ Gourds should be harvested when their shells become hard or when their color changes from green to brown.
- ❑ Cover tender plants with sheets or lightweight fabric covers to protect from frost.

week 2

- ❑ Cannas and dahlias can be dug when frost nips their foliage. Allow the plants to dry under cover in an airy, frost-free place before storage.

week 3

- ❑ Transplant deciduous trees once they have dropped their leaves.
- ❑ Monitor fruit plantings for mouse activity and take steps for their control if present.
- ❑ Continue mowing lawns until growth stops. Keep leaves raked off lawns to prevent smothering grass. Now is a good time to apply lime if soil tests indicate.

week 4

- ❑ Plant tulips now.
- ❑ Trees may be fertilized now, following soil test guidelines.
- ❑ Place wire guards around trunks of young fruit trees for protection against mice and rabbits.
- ❑ Winterize mowers before storage.

For additional information on plant care and gardening:

- *visit the William T. Kemper Center for Home Gardening.*
- *call the Horticultural Answer Service, Monday through Friday, 9 a.m. to noon, at (314) 577-5143*
- *check out the Gardening section at www.mobot.org.*

photo by Sam Bahr

November

all month

- ❑ Prevent insects or diseases from overwintering by removing and composting all plant debris. Till under any unused, finished compost to expose insect pests to cold.
- ❑ Now is the ideal time to plant trees and shrubs. Prepare the site by loosening the soil beyond the drip line of each plant. Plant no deeper than they grew in the nursery. Remove all wires, ropes, and non-biodegradable materials from roots before back filling. Apply a 2–3 inch mulch layer, but stay several inches away from the trunk. Keep the soil moist to the depth of the roots.
- ❑ Collect soil samples to test for pH and nutritional levels.
- ❑ Keep leaves raked up off of the lawn to prevent injury. A final fall application of fertilizer can be applied to bluegrass and fescue lawns.

week 1

- ❑ Plant tulips now.

week 2

- ❑ Newly planted broadleaf evergreens such as azaleas, boxwood, and hollies benefit from a burlap screen for winter wind protection. Set screen stakes in place before the ground freezes.
- ❑ Shut off and drain any outdoor water pipes, hoses, or irrigation systems that may freeze during cold weather.
- ❑ Set up bird feeders. Birds appreciate a source of unfrozen drinking water during the winter.

week 3

- ❑ Just before the ground freezes, bury root crops (carrots, radishes, turnips, and Jerusalem artichokes) under a deep layer of leaves or straw. Harvest as needed during winter by pulling back this protective mulch.
- ❑ Mulch strawberries for winter with straw. Apply straw loosely, but thick enough to hide plants from view.
- ❑ House plant basics for winter: reduce or eliminate fertilizer until spring. Shorter days mean slower growth. Slower growth means less frequent watering. Plants in plastic pots need less water than those in clay pots. Plants in cooler rooms need less water and grow slower than those in warm rooms.

week 4

- ❑ Cover garden pools with netting to prevent leaves from fouling the water. Oxygen depletion from rotting organic matter can kill pond fish. Take steps to prevent garden pools from freezing solid in winter. Covering pools with an insulating material, or floating a stock tank water heater in the pond, will lessen the chance of ice damage.
- ❑ Roses should be winterized after a heavy frost. Place a 6–10 inch deep layer of mulch or topsoil over each plant. Prune sparingly, just enough to shorten overly long canes. Climbers should not be pruned at this time.
- ❑ To prevent injury from frost, mulch flower and bulb beds after the ground freezes.

photo by Ryan Rumberger

December

all month

- ❑ On cold nights, move houseplants back from icy windows to prevent chilling injury.
- ❑ Overwintering geraniums like bright light, cool temperatures, and soils on the dry side.
- ❑ Water houseplants with tepid water; cold may shock them.
- ❑ Be sure the root zones of azaleas and rhododendrons are mulched. Oak leaves, shredded oak bark, or pine needles are preferred.

week 1

- ❑ Clean and oil garden tools before storing for winter.
- ❑ Winterize power equipment before storing. Change the oil and lubricate moving parts. Either drain fuel systems or mix a gas stabilizing additive into the tank.
- ❑ Apply mulches to bulbs, perennials, and other small plants once the ground freezes.
- ❑ If you feed rabbits corn or alfalfa, they may leave fruit tree bark unharmed.
- ❑ Hairspray helps keep seed heads and dried flowers intact on wreaths and arrangements.

week 2

- ❑ Holiday poinsettia basics: sun for at least half the day, keep away from drafts, registers, and radiators. Night temperatures in 50s or low 60s; days at 70 degrees. The soil should dry only slightly between thorough waterings. Discard the drainage. Be sure to punch holes in decorative foil wraps to prevent soggy soil conditions.
- ❑ Trim hollies and decorate with the prunings. Only female trees bear the berries. If fruits are desired, a male tree must be growing nearby for pollination.
- ❑ Christmas trees hold needles longer if you make a clean, fresh cut at the base and keep the trunk standing in water.

photo from Missouri Botanical Garden Plantfinder

Featured Plant of Merit™

Christmas Fern
Polystichum acrostichoides

This Missouri native fern occurs in both dry and moist wooded slopes, moist banks, and ravines. It typically grows in a fountain-like clump to 2 feet tall and features leathery, lance-shaped, evergreen fronds with stocking-shaped leaflets. Best grown in organically rich, dry to medium moisture, well-drained soils in part shade to full shade, this fern provides good winter interest for the landscape.

Plants of Merit™ is a program of the Missouri Botanical Garden. Plants are selected by regional horticulture experts for outstanding qualities and dependable performance in the lower Midwest. View all current PMs at www.plantsofmerit.org.

photo by Laila Wessel

Check out the Plants of Merit growing in the William T. Kemper Center for Home Gardening display gardens.

Plants of Merit™ Challenge

The Plants of Merit program has been awarded a generous challenge grant from the William T. Kemper Foundation—Commerce Bank, Trustee. For 2008 and 2009, the Foundation will match all new donations to the Plants of Merit program dollar-for-dollar up to $50,000 each year. Funding will help underwrite printing and distribution of program information materials, website development, plant trials, visits with nurseries and garden centers throughout the region, presentations at industry meetings, and more.

This is a great opportunity for Garden members to increase the impact of Plants of Merit. To participate, please contact the Institutional Advancement Office at (314) 577-9500.

Students with autism from the Southview School in the St. Louis County Special School District build communication skills by working with plants in the Zimmerman Scented Garden.

BRANCHING OUT:

How Therapeutic Horticulture Assists People with Autism

by Jennifer Smith, Supervisor, Therapeutic Horticulture Programs

Recently as I chatted with a teacher about plans for her school's garden, we decided to take a walk to the small greenhouse to continue our discussion. One student had heard the word "greenhouse" and decided to follow us down the hallway. The teacher's first reaction was to send her back to the classroom, but then she realized it was Julie.

Julie is a 9-year-old child with autism. She is non-verbal, and has good days and bad days like all of us. When I observed Julie in class, she would usually go off by herself and did not seem very happy. The first time I saw her walk into the greenhouse, however, her frown turned into a big smile. She began to hum a little tune as she walked around the greenhouse touching everything she could get her hands on. Once she felt the potting soil, it was clear who was going to be my soil mixer for the rest of the year. Julie loved the tactile nature of the potting soil. I would add the individual ingredients to the soil bin and she would use both her hands and knead the soil as if it were bread dough. She had found her place with the other kids in our assembly line of potting up plants and seed starting. It was obvious that Julie was more relaxed and happier just being in the greenhouse.

Autism is a developmental disorder that affects areas of the brain that control social ability and communication skills. According to the American Occupational Therapy Association, the disorder can often cause sensitivity to sight, hearing, touch, smell, and taste. Fifty children are diagnosed with autism every day (Judevine Center for Autism). Based on the Centers for Disease Control and Prevention, one out of 166 American children are classified as being on the autistic spectrum. Boys are more likely to develop autism than girls, and most children are diagnosed before the age of three. Children and

photo courtesy Jennifer Smith

In the classroom, Garden horticulture therapist Jennifer Smith (seated at left) works with children with autism, who enjoy tactile stimulation, on "sensory integration."

"Plants possess life-enhancing qualities that encourage people to respond to them. In a judgmental world, plants are non-threatening and non-discriminating. They are living entities that respond directly to the care that is given them, not to the intellectual or physical capacities of the gardener. In short, they provide a benevolent setting in which a person can take the first steps toward confidence."

– Charles A. Lewis, father of horticultural therapy

adults with autism have difficulty in both verbal and non-verbal communication and can have a hard time relating to the outside world. Sometimes individuals with autism may demonstrate aggressive behavior because of their frustration with trying to communicate with others.

There is no medical test to diagnose autism. Diagnosis is based solely on behavioral observation. There is no known cure for autism, but it is treatable. It is believed with early and effective intervention, individuals with autism may grow to become independent and productive adults. By integrating additional alternative therapies—such as music, art, and horticulture—to occupational, physical, and speech therapies, we hope to find a way to reach and engage a child with autism in a positive and meaningful way.

Working with plants and other elements of nature can be a great way to involve all the senses of people with autism in a gentle way. For children, greenhouse tasks can also be an effective way to help build communication skills. The official definition of Horticulture Therapy (HT) according to the American Horticultural Therapy Association is the engagement of a person in gardening-related activities, facilitated by a trained therapist, to achieve specific treatment goals. HT promotes many benefits such as cognitive development, psychological improvement, social growth, and physical improvement.

When working with children with autism, the Missouri Botanical Garden's HT staff concentrate on communication and social growth as well as sensory integration. If the children enjoy tactile stimulation, we incorporate "touchy feely" plants or soil mixing into the activity. If they are working on improving their verbal skills, we have a conversation or ask questions about what we are doing within the activity.

As for Julie, words cannot describe how much joy it brought me to know we found a place where she could find some peace and a place where she seemed to get that same relaxing feeling that I get every time I walk into a greenhouse.

You Can Help

You can help the Garden reach more children with autism like Julie. Currently, the Garden's horticulture therapists work with two programs on a regular basis: FASTT in O'Fallon, Illinois, and Southview School in the St. Louis County Special School District. Requests for new programs arrive regularly, but the Garden does not have the resources to meet growing needs. We are actively seeking donors to support this innovative program. For more details, please contact Katherine Kornfeld at (314) 577-9513.

Give the Gift of Good Health to a Senior

Offered through the Garden's innovative Horticulture Therapy (HT) program, the Senior Education Programs enrich the lives of senior citizens with limited resources and/or abilities. Garden instructors lead plant and gardening activities in creative ways to improve mental and physical health and well-being. The Oaks-and-Acorns program encourages seniors to make a botanical project with grandchildren or young friends in their lives. For more information or to purchase gift certificates, call (314) 577-9506.

KIDSTUFF

The Power of Plants

It's no secret: at the Missouri Botanical Garden we think plants are amazing! Plants are real-life superheroes that help us every day. They grow in special ways, survive in harsh climates, and provide humans with things that we need. They are the basis of life as we know it.

Just a few great things plants provide for people:

- Oxygen in the air we breathe
- Food
- Medicines
- Materials for buildings and clothes
- Fuel for cars
- Pollution protection for rivers, lakes, and oceans
- Nutrients for soil
- Shade
- Beauty

The Garden is calling on students in elementary, middle, or high school to identify the amazing Power of Plants and help tell their story.

Plant Superhero: Rosy Periwinkle

(Catharanthus roseus)

You may call me Rosy, but I'm the "Periwinkle of Power." I live on the opposite side of the world in Madagascar, an island off the east coast of Africa. While I may appear to be just a pretty pink flower, I have the power to heal! Fifty years ago, scientists discovered that I contain special chemicals that help fight cancer, especially childhood leukemia.

THE CONTEST—win a $1,000 savings bond!

Get Started!

Visit the Garden to try to find your super-plant "in the wild." The William T. Kemper Center for Home Gardening can help you pick a plant that does great things for people. Then, using facts about your plant's superpowers, create something to tell the world about your plant superhero.

What can you create?

All entries must be two- or three-dimensional artwork. This includes things like cartoons, comic strips, news articles, posters, stories, pamphlets, flyers, models, action figures, sculptures, and dioramas. Be creative! Two-dimensional entries must be able to hang on a wall and can be no larger than 18 by 24 inches. Three-dimensional entries must be no larger than 12 inches wide by 24 inches tall by 12 inches deep.

Entering the contest

All submissions must be accompanied by an entry form, available on the Garden's website, where you will also find mailing and drop-off addresses. All entries must be received by 4 p.m. on Saturday, January 31, 2009.

Who can participate?

Students in elementary, middle, or high school can participate in this contest as individuals or as groups.

Win $1,000 Savings Bond

All participants will be honored at a reception at the Garden. Winning artworks will be displayed at the Garden. First prize is a $1,000 savings bond. Prizes are awarded for first, second, and third place, and honorable mention, in both individual and group categories.

For complete rules and regulations, visit the Garden's website, www.mobot.org.

Greening the Holidays

The days grow shorter; the temperature falls; it's beginning to look a lot like holiday time! Once a time of religious joy celebrated with the family, holidays today include a not insignificant bit of consumer frenzy, which sounds awfully bad for the environment, right? Millions of trees chopped down, megawatts of flashing lights, and tons and tons of garbage generated—in fact, 25 percent more than the rest of the year. But now that green has become, well, the new green, it is easier than ever to have your holiday cake and eat it too. Happy Green Holidays!

Candles: Candles create a warm, inviting holiday atmosphere—and are the centerpiece of Chanukah and Kwanzaa traditions. However, petroleum-based (paraffin) candles create indoor air pollution, releasing soot and even carcinogenic toxins into the air. Choose soy or beeswax candles, which burn cleanly, for holiday festivities.

Lights: As strings of lights fail, replace them with the new LED lights. (Yep, just like in your calculator!) LEDs have semiconductor material rather than incandescent filaments, thus using 90 percent less energy than traditional lighting. According to one U.S. Department of Energy study, if everyone replaced their conventional holiday light strings with LEDs, at least two billion kilowatt-hours of electricity could be saved in a month—that's enough to power 200,000 homes for a year!

Supergreen: Since even LED lights will bump up your electricity consumption somewhat, why not purchase AmerenUE's new PurePower renewable energy for your electric bill?

Tabletop: Consider table and tree decorations made of natural materials: painted pinecones and gourds make attractive ornaments. For a centerpiece, try a cornucopia of colorful apples (or heirloom pumpkins) that can later be "recycled" into pie. Visit the farmers' market and be creative.

Christmas trees: Artificial trees are made of plastic, and although they can be reused, they cannot be recycled. Living trees are now grown on farms, so purchase a cut tree from a reputable local grower. For a list of local growers, visit www.missourichristmastrees.org. Once the holidays are over, be sure to recycle your tree.

Supergreen: Try a living tree. They have special requirements, so some homework is required, but it is fun to look out at the "trees of Christmases past" growing in your backyard.

Giftwrap: Trash generation skyrockets around the holidays. Why not use re-usable bags (or even cloth bags) to wrap presents? You can also use newspaper, old maps and calendars, or even children's artwork to wrap your presents.

Gifts: In a recent poll conducted by the nonprofit Center for a New American Dream, 83 percent of those surveyed said their dream gift would be more time with friends and family. Why not purchase a gift membership to the Garden for friends and loved ones? Or consider gift certificates for classes for adults in subjects like gardening, cooking, crafts, and more. Introduce a child or grandchild to the wonders of the natural world with a class at the Garden.

Holiday Shopping

Do the planet a favor: buy antiques and vintage! Try a treasure hunt among the gently used items at the Little Shop Around the Corner. Or shop the beautiful recycled-content items at the Garden Gate Shop, such as charming purses made from candy wrappers. (Members enjoy 20 percent off during members-only holiday sales November 5–9 and December 3–7.)

Making a Difference

Volunteer Service Recognition

On Thursday, June 12, the Garden hosted the annual volunteer service recognition luncheon honoring volunteers with awards for special service and for their 10-, 20-, 30-, and even 40-year commitments! The Garden is deeply grateful to the volunteer corps, without whom we could not operate at current levels of international renown and community outreach.

Thirty-year volunteer: Adrienne Biesterfeldt.

Twenty-year volunteers: Martin Meagher, Pat Leigh, Judy Horan, Sara Johnson, Linda Whitten, Nancy Seifer, Al Hirson. Not pictured: Mary Chapman, Mary Longrais, Jill Schroer, Jane Tschudy.

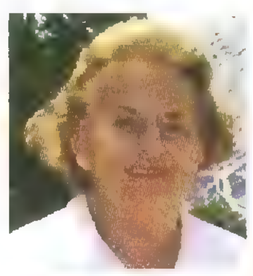
Ten-year volunteers: First row: Betty Tonneas, Millie Stewart, Gail Barclay, Donna Walker, Bruce Cramer, Horst Zekert. Second row: Shirley Snitzer, Virginia Grimm, Victoria Kearns, Mary Serbi, Diane Siegel, Donna Jensen, John Altman, Joanne Monti, Claire Meyners, Gwynn Turner. Third row: Ray Potter, Beth Holbrooke, Earl Shreckengast, Dick Sokol, Van Spurgeon, Pat Adams, Sue Butler. Back row: Walter Heitmann, Robert Siemer, Jim Hoefener, Pat Patterson. Not pictured: Carole Anthony, Bob Barnicle, Barbara Barr, Joyce Davit, Eleanor Ellis, Diane Ely, Elaine Flieg, Jane Helbig, Nancy LaBrier, Donna MacDonald, Laura Meyer, Dolores Rahn, Donald Rumer, Jerome Schiller, Glee Stanley, Lila Traeger, Helen Walck, Waz Wasileski, Pat Winkelmann, Dottie Woodward.

Here's to Forty Years!

It takes a special commitment to dedicate 40 years of volunteer service. Forty years ago, in 1968, the Garden had about 100 volunteers and 44 staff. In 2008, we have 1,529 volunteers and 475 staff.
This year, we honor four of these special volunteers.

Jean Crowder has served as president of the Tower Grove Auxiliary for the past 20 years. Since 1977, the Auxilians have raised more than $120,000 to support House restoration and education programs. Jean was appointed chairperson of the Membership Services Desk team in 1992, where she managed a team of 75 volunteers, and for many years she led volunteer recruitment for the Best of Missouri Market. She has contributed over 5,000 hours.

Edna Dependahl remembers responding to an ad in the newspaper for volunteers to form the first "Garden Guides" (now the Docents) training class at the Garden. She continues to work as a Docent, and has added responsibilities as a Garden Host, Tower Grove House Docent, and Ambassador for the art exhibitions (*Chihuly*, *Chapungu*, and now *Niki*).



Shirley Durfee became a volunteer in 1968 after she bought two acres of land that included 60 rose bushes and wanted to learn how to care for them. She joined the Garden Guides (now the Docents) and through her Docent and Garden Host volunteering, has helped thousands of visitors appreciate and understand all the Garden has to offer.

Mary Clair Wenger served as president of the St. Louis Herb Society from 1978 to 1980 and continues to be an avid member and volunteer with her "What's New" presentation at the Society's regular meetings.

Corporate Partner Profile: Wachovia Securities

Presenting sponsor of this year's Japanese Festival, Wachovia Securities is "with" St. Louis following its combination with A.G. Edwards in 2007. Wachovia Securities, headquartered in St. Louis, has become the nation's second largest brokerage firm, with 18,000 registered representatives in 4,000 locations across the United States. They emphasize personal relationships, client service, and a comprehensive range of financial products—and are committed to community involvement in St. Louis.

Through improving education, promoting financial literacy, partnering with community organizations, and encouraging employee volunteer involvement, Wachovia Securities is helping to improve the quality of life and make a difference. At the Missouri Botanical Garden, Wachovia Securities is carrying on the support that A.G. Edwards provided for many years and was the presenting sponsor of the 2008 Japanese Festival. "We are delighted to welcome Wachovia Securities to St. Louis," says Dr. Peter Raven, president of the Garden, "and are happy to introduce our new neighbors to all St. Louis has to offer—especially the Garden!"

Docent Program Celebrates 40 Years

The Garden Docents celebrate their 40th anniversary in 2008. Originally called the Garden Guides, the group was founded in 1968 by the Garden's Education Director Ken Peck. It was one of the Garden's first formal volunteer organizations. Docents today must complete a course of study before they are certified to lead tours for the public (daily at 1 p.m.) and for groups of school children and other individuals by arrangement. The Docents have provided invaluable service to hundreds of thousands of students and visitors throughout the years, enriching the experience of generations of people. The Garden is truly grateful for their service.

Docents: Front row: Arlene Nazzoli, Judy Horan, Lynn Slackman, Carol Swink, Pat Waling, Betty Smith, Sandy Sher, Edna Dependahl, Adrienne Biesterfeldt, Joanne Fogarty, Roberta Dearing, Janne Niemoeller, Francine Boillat, Barbara Huning, Dorothy Hohenberger, Lisa Wallis, Pat Adams, Pat Beuckman, Carol Agatstein, Shirley Durfee, Virginia Noe, Barbara Johnson, Leslie Clark, Marge Petruska, Joanne Monti. Back row: Jerry Overman, Bill Lamberton, Bill Lampe, Dick Sokol, Waz Wasileski, Dan Gravens, Fredric Rissover. Not pictured: Jackie Bainter, Elaine Bante, Kathy Barkey, Lucyann Boston, Jerry Buterin, Sue Butler, Cathy Chen, Joanna Gerst, Martha Gersten, Michelle Grove, Florence Hoey, Sara Johnson, Donna MacDonald, Jackie Mitchell, Gale Murphy, Mary Neher, Todd Schroeder, Shirley Walsh, Bob Weinman, Norma Williams.

Japanese Garden drum bridge

Support the Henry Shaw Fund

The Missouri Botanical Garden is a charitable trust. We depend on your donations to support everything from the beauty of our facilities to the services and educational programs we offer. Won't you please consider making a tax-deductible gift as part of your charitable contributions for 2008? Your gift to the Henry Shaw Fund supports the Garden's plant science research here and abroad, extends recreational and educational programs for people of all ages, and nurtures the beauty of the Garden that is enjoyed by more than 650,000 visitors annually. Individuals who contribute $250 or more to the 2008 Henry Shaw Fund will receive a special gift. For information regarding the Henry Shaw Fund or to charge your gift by phone, please call (314) 577-9495.

Butterfly House

15193 Olive Blvd., Chesterfield, MO 63017
(636) 530-0076 • www.butterflyhouse.org

National Geographic photographer Robert Clark (right) snaps photos of rare butterflies.

National Geographic Visits

In late January, renowned National Geographic photographer Robert Clark visited the Sophia M. Sachs Butterfly House. Clark needed to capture some images of rare butterflies for an article on Alfred Russel Wallace, co-discoverer of the theory of evolution by natural selection. The Butterfly House curator of butterflies, Mark Deering, coordinated the animals for the shoot.

"Wallace mentions a number of butterfly species in his travels through the Malay archipelago," says Deering. "We had several of them. The shoot went well and they got some great shots!"

"In assisting organizations like *National Geographic*, the Butterfly House advances its mission to foster a better understanding of plants and animals in order to promote conservation and restoration of natural habitats," says Joe Norton, Butterfly House director. Check your December issue of *National Geographic* to see photographs of *Trogonoptera brookiana* and *Ornithoptera priamu* from the Butterfly House.

FEATURED FRIEND

The Malachite
Siproeta stelenes

Range: Florida south through Central America
Host plant: *Blechum, Ruellia*

Malachite butterflies are sometimes common in Florida, but they are very much a tropical butterfly. The caterpillars are black and quite spiky, not a tasty mouthful for predators. The adult enjoys feeding at our fruit trays, but will also drink nectar from flowers. They can often be found drinking water off the sidewalks, so be sure to watch your step!

Events and Classes

Owl Outing—A Rare Twilight Treat!
Fridays, October 3 and 10, 5:30 to 7 p.m.
See owl butterflies in a whole new light—twilight! Owl butterflies are most animated at dusk and dawn with lightning-fast swooping movements in groups of a dozen or more. Observe them in the conservatory, make a craft, and more. For families with children ages six and up. Registration required; call (636) 733-2339.

Bootterflies
Saturday and Sunday, October 18-19, 11 a.m. to 2 p.m.
Little ghosts and goblins can join in a "spooktacular" adventure guaranteed to get Halloween celebrations off to a fun start! Bring children in costume to play games, create crafts, take home tasty treats, and have a ghostly good time. Activities are included with regular admission.

Camp Bugaloo
Explore the upcoming seasons through favorite books and activities for ages two to four with a parent or guardian. Select one date per month. $18 per class ($16 for Garden members). Pre-registration required; (636) 530-0076, ext. 13.

Spring | *Friday, November 7, 10:30 a.m. to noon; Sunday, November 9, 12:30 to 2 p.m.*
Summer | *Friday, December 12, 10:30 a.m. to noon; Sunday, December 14, 12:30 to 2 p.m.*

SHAW NATURE RESERVE

Hwy. 100 & 44 (exit 253), Gray Summit, MO 63039
phone: (636) 451-3512 • www.shawnature.org

photo by Scott Woodbury

Wilderness Wagon tours every weekend in October.

Wilderness Wagon Tours

Saturdays and Sundays in October, at 1, 2, and 3 p.m., departs from Visitor Center
A great way to shorten the hike to the Meramec river or to the wetlands if you have small children or non-hikers in your group, the Wilderness Wagon is a narrated wagon ride, which travels the 3-mile Trail House Loop Road with stops at the Trail House and wetland bus stop. Get off at either stop and get picked up later, or stay on for the whole one-hour narrated tour to see and learn from the comfort of an elevated seat.
$1 per person. Group tours are available. The Wilderness Wagon only runs through the end of October, so don't miss out!

Featured Native Plant

photo: Missouri Botanical Garden Plantfinder

Beautyberry
Callicarpa americana

Whorled clusters of small pink flowers appear along the stems of beautyberry in midsummer, attracting bees, hummingbirds, and butterflies. Lustrous purple-lavender berries ripen in fall and provide forage for birds that overwinter in our region. This rounded, 4–5 foot native shrub adapts well to both sun and light shade situations.

Classes and Events

Garden Buds
Introduce your child to the wonder of Shaw Nature Reserve. Each 2½-hour class will include hands-on activities, a story, snack, and craft. Sessions are limited to 10 children. For ages 3–5 with a parent or guardian. $18 ($16 for Garden members). 9:30 a.m. to noon. Registration required; call (636) 451-3512, extension 0.

What's "Hopping" in the Prairie | *Tuesday, October 7*
What Are You Doing This Winter? | *Tuesday, November 4*

Native Plant School
Plant experts discuss fall blooming, planting, identification and maintenance, and answer native landscaping questions. 1 to 4 p.m. Whitmire Wildflower Garden. $12 ($8 for Garden members). Registration required; call (636) 451-3512, extension 0.

Native Perennials and Grasses for Landscaping
Thursday, October 9
Native Trees in Winter | *Thursday, November 13*

Discover Nature Families
Presented by the Missouri Department of Conservation and the Shaw Nature Reserve. Drop in from 9:30 a.m. to noon. Included with admission.

Prairie Adventure at the Sod House | *Saturday, October 18*
Who Lives Here? | *Saturday, November 15*

Un-Haunted Halloween
Saturday, October 25, 6:30 to 8:30 p.m.
Don your costume to explore our Halloween Village and the surrounding forest and prairie. Wander through the cat's eye maze, listen to stories, and enjoy a tasty campfire treat. $7 per person. Registration required; call (636) 451-3512, extension 0.

Bascom House for the Holidays
Saturday, November 22 through January 4, 2009, 10 a.m. to 4 p.m.
See the historic Joseph H. Bascom House decked in holiday finery!

Green Resources Coordinator Hope Breidenbach checks some facts on native plant gardening for a caller.

Green Resources Hotline *at Your Service!*

When something "green" has you stumped, who ya gonna call? EarthWays Center! The EarthWays Center is now accepting e-mail and phone inquiries. Think of it as a Horticulture Answer Service for your sustainability questions. Resources coordinator Hope Breidenbach will help Garden members and the public find information on green products and practices.

Already calls are pouring in. Trends reflect the increased demand of consumers to "go green" with their home construction. "We receive a lot of calls from people looking to build a new home or planning a home remodeling project. They ask about local service providers and availability of products from pervious paving materials to roofing to rain barrels," notes Breidenbach, who continued:

"With renewable energy options increasingly in the news, we're also getting a lot of questions about alternative energy sources, such as solar power. People are especially interested in finding local installers."

Recycling is a perennial topic too, with many callers expressing concern about options to properly dispose of burned-out compact fluorescent light bulbs. These energy-saving bulbs contain trace amounts of mercury, so Breidenbach refers callers to a new national recycling program that allows individuals to bring unbroken CFL bulbs to the customer service counter of any Home Depot store, where bulbs are accepted for recycling at no charge.

"Our staff has fielded public inquiries for years," says Glenda Abney, director of EarthWays Center. "Prompted by the steady increase in public awareness of sustainability issues, we developed a new position to manage this flow of information. It's an exciting opportunity for the Garden to educate our members and friends in one-on-one interactions."

Green Resources Hotline: Send us your questions!

greenresources@mobot.org

☎ (314) 577-0225

EARTHWAYS CENTER

3617 Grandel Square, St. Louis, MO 63108
phone (314) 577-0220 • www.earthwayscenter.org

Learn Green – Live Green

Classes and Tours

Take a Class—Build Your Skills

Adult classes at the EarthWays Center cover the "how and why" of everyday sustainability. Hands-on workshops and discussion forums are led by resourceful staff, often featuring local experts as guest presenters. Upcoming classes include:

Greening Your New Home—No "Greenwashing"
Thurs., Oct. 16 or Wed., Nov. 12

Greening Your Small Business
Wednesday, November 5

Improving Energy and Comfort at Home
Tuesdays, November 18 or December 9

Registration is required for all classes. Discounted class fees always apply for Garden members. Detailed class descriptions and times can be found at www.earthwayscenter.org.

Public Tours

Upcoming dates: *October 18–19, November 15–16, December 20–21*

Tour the EarthWays Center, a century-old Victorian house renovated to demonstrate energy-efficient materials, systems and practices. Public tours take place on the third weekend of every month at 11 a.m., noon, 1, and 2 p.m. No reservations necessary $3 (free for members). Schedule group tours online at www.earthwayscenter.org.

Tributes

May through July 2008

A tribute gift to the Garden is a wonderful way to honor family and friends. Tributes of $25 and up are listed in the *Bulletin*. If you have questions regarding giving opportunities at the Garden, please call (314) 577-9500. You can also make a tribute gift online at our website, www.mobot.org.

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Bricks from May through July 2008.

Engraved clay bricks and signature bronze bricks are a wonderful way to commemorate any special occasion, as well as final memorials. For additional information regarding the Garden's brick program, please contact the Institutional Advancement Office at (314) 577-0874 or visit www.mobot.org.

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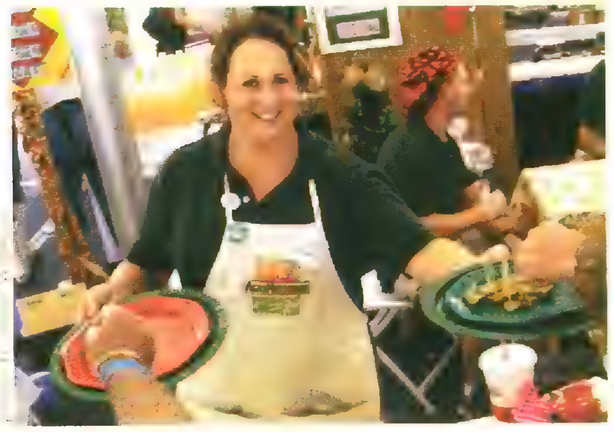
October Events

Visit www.mobot.org for the latest information.



Best of Missouri Market

Saturday-Sunday, October 4–5, 9 a.m. to 5 p.m.
Members-only early bird shopping Saturday, 7 to 9 a.m.

The Garden's annual Best of Missouri Market offers fresh food, family fun, and plenty of finds for your holiday shopping. Dozens of new vendors and lots of returning favorites await you under the big tents, where you'll visit over 130 purveyors of the finest edibles and artistic goodies Missouri has to offer. Kids can decorate a doughnut, paint a pumpkin, make cider, and milk a cow. Live music by local jazz and bluegrass artists sets the stage. Park for free in lots along Shaw Boulevard with complimentary shuttles.

Admission: $10 ($7 seniors 65+); $3 for Garden members and children ages 3–12. Garden members' children and children under 3 are free. New and renewing members receive free admission.

Lead sponsorship by Schnuck Markets, Inc. Additional support provided by Central States Coca-Cola Bottling Company, Commerce Bank, AgriMissouri, Drury Inns, Inc., Edward Jones, IR Climate Control Technologies/Hussmann Corporation, St. John's Mercy Children's Hospital, Waterway Gas and Wash, Home Depot, KMOX, and Wehrenberg Theatres.

Nora Stern and Ellen Dubinsky with David W. Kemper, Chairman, President, and CEO of Commerce Bancshares, Inc.

Market Founders Honored

The William T. Kemper Foundation—Commerce Bank Trustee awarded their 2008 Community Service Award to Nora Stern and Ellen Dubinsky. Nora and Ellen were honored for their dedication as founders and co-chairs of the Garden's Best of Missouri Market for 17 years. The award includes a contribution to the Garden in their honor.

photo by Jennifer Meinhardt

FINAL MONTH

Niki—Final Weeks! ☺

Through Friday, October 31

Let them ride the Nikigator one last time. Don't miss the final weeks of *Niki*. Children are encouraged to touch, sit on, and even climb many of the works. Sponsored by Anheuser-Busch Companies, Sachs Properties, and the *St. Louis Post-Dispatch*.

Members' Day: Anniversary Booksigning with Ian Adams ✿

Thursday, October 16, 11 a.m., Shoenberg Theater

(see back cover for information)

Members' Day: Taste of Country Color ✿

Saturday, October 18, 9 a.m. to noon, SNR

Enjoy the splendor of autumn at the Shaw Nature Reserve. Tours depart every hour for an easy 1-mile walk, or ride the Wilderness Wagon. Light refreshments served in the Maritz Trail House.

☺ = fun for families
✿ = members' event

Ghouls in the Garden ✿ ☺

Sunday, October 26, 1 to 3 p.m., Garden grounds

Trick or treat! Bring the little ones in costume to enjoy a fun-filled afternoon. Enjoy treats at five different themed stations throughout the Garden. Finish off with FREE admission to the Children's Garden. Free for members, but registration is required. Call (314) 577-9570 or register online at www.mobot.org/membership.

Children's Garden Closing for the Season ☺

Sunday, October 26 through Friday, October 31

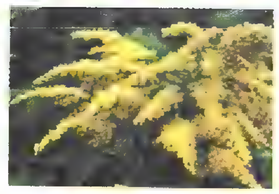
Help put the Doris I. Schnuck Children's Garden to bed for the season! Participate in fall-themed activities all week long. At different times, plant bulbs, sow seeds, learn about fall harvest and hibernation. Fall is a great time to experience the Children's Garden with the youngsters in your life. Visit us at www.mobot.org/finn for a detailed schedule of activities.

October

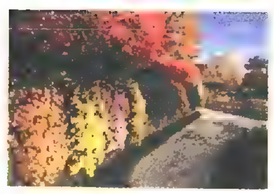
2008

average temperature: 58.25
average monthly precipitation: 2.76 in.

fall asters



goldenrod



mums

willow-leaved sunflower

gourds

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Closing on Oct. 31 for the season: • Children's Garden • Plastic Pot Recycling • Tram operation • Terrace Café at the William T. Kemper Center for Home Gardening		01 • Fabric art by Ann Cove, through Nov. 16.	02 Eid-Al-Fitr • Greater St. Louis Dahlia Society show, noon to 5 p.m.	03 • Greater St. Louis Dahlia Society show. • Owl Outing. 5:30 to 7 p.m., BH $ ☎	04 • Wilderness Wagon. 1, 2, and 3 p.m. SNR $
05 • Wilderness Wagon. 1, 2, and 3 p.m. SNR $	06 • St. Louis Herb Society: Gifts from the Garden. 10 a.m. to noon, KC $ ☎	07 • Garden Buds: What's Hopping in the Prairie. 9:30 a.m. to noon. SNR $ ☎	08	09 Yom Kippur • Native Plant School: Native Perennials and Grasses for Landscaping. 1 to 4 p.m., SNR $ ☎	10 • Owl Outing. 5:30 to 7 p.m., BH $ ☎	11 • Wilderness Wagon. 1, 2, and 3 p.m. SNR $
12 • Wilderness Wagon. 1, 2, and 3 p.m. SNR $	13 Columbus Day	14	15 • "Travels in Ecuador" by Dr. Carmen Ulloa, 7 to 9 p.m. MC $ ☎	16 • Members' Day: Ian Adams presentation and book signing, 11 a.m., ST • Greening Your New Home. 5:30 to 9 p.m. EWC $ ☎	17 • Photography workshop with Ian Adams. $ ☎	18 • Members' Day: Taste of Country Color, 9 a.m. to noon, SNR • Photography workshop $☎ • Mid-American Lily Society sale. • Bootterflies Halloween party, 11 a.m. to 2 p.m., BH • Public Tour Days. EWC
19 • Mid-American Regional Lily Society sale. • Public Tour Days. EWC • Wilderness Wagon. 1, 2, and 3 p.m. SNR $	20	21	22	23	24	25 • Metropolitan St. Louis African Violet Council fall sale. • Un-Haunted Halloween. 6:30 to 8:30 p.m. SNR $☎ • Wilderness Wagon. 1, 2, and 3 p.m. SNR $
26 • Members: Ghouls in the Garden, 1 to 3 p.m. • Wilderness Wagon. 1, 2, and 3 p.m. SNR $ • Children's Garden Closing for the Season	27 • Children's Garden Closing for the Season	28 • Children's Garden Closing for the Season	29 • Children's Garden Closing for the Season	30 • Children's Garden Closing for the Season	31 Halloween • *Niki* exhibition closes • Children's Garden Closing for the Season	

photos by Ian Adams, Beth Haines, Josh Monken, Heather Marie Osborn, Erin Whitson, Leslie Wallace, and www.mobot.org/gardeninghelp/plantfinder

November Events

Visit www.mobot.org for the latest information.

photo by Leslie Wallace

Gardenland Express!

Holiday Flower & Train Show

Wednesday, November 26 through Sunday, January 4, 2009

One of St. Louis's most beloved holiday traditions returns with Gardenland Express, the Garden's annual holiday flower and train show. Be swept away to a wintery New England wonderland in the mountains of Vermont. Tiny villages, ski resorts, and covered bridges dot the living landscape of dwarf conifers, evergreens, succulents, and moss. Eight G-scale model trains chug through the scenery surrounded by hundreds of colorful poinsettias and seasonal flowers.

Gardenland Express is a temporary installation, created fresh each year by the Garden's talented team of horticulturists and volunteers. Starting in early November, catch a glimpse of the railroad garden installation in progress online at www.mobot.org/hort. Click on "Activities and Events."

Admission: $3 for ages 3 and up, in addition to Garden admission. Members are admitted free.

Members' Evening ✿ | *Tuesday, December 2, 5 to 8 p.m., Ridgway Center*
Don't miss this members-only preview and magical evening viewing of Gardenland Express. Cash bar, musical entertainment, special holiday menu in Sassafras, and holiday shopping in the Garden Gate Shop.

Sponsored by CBIZ & Mayer Hoffman McCann P.C., Central States Coca-Cola

New Member Orientation ✿

Saturday, November 1, noon, Shoenberg Theater
Learn about events, discounts, classes, and all the benefits of membership. Participants receive Bonus Bloom passes and discounts in Sassafras and the Garden Gate Shop. Bring your friends who are interested in membership too!

photo by Josh Menker

Members' Day: Holiday Decorating ✿

Wednesday, November 5, 11 a.m., Shoenberg Theater
Collect fresh tips and ideas to make your home festive and welcoming this holiday season. Learn how to use fresh, seasonal materials as the focal point of your home holiday décor.

Frog in the Clouds ✿ ☺

Sunday, November 9, 3:30 p.m.
The Garden is partnering with the Center of Creative Arts (COCA) to promote "Frog in the Clouds," the irresistible adventures of an adorable amphibian. After the show, members can meet with the Children's Garden mascot, Finn, and enjoy refreshments and a botanical craft. Ticket price $18 ($12 for members). Call (314) 725-1834 x207 or e-mail ddunninggill@cocastl.org for reservations.

Science Café: Sustainability

Thursday, November 20, 6:30 to 9 p.m.
"Sustainability: Finding Your Way Forward" is presented by Glenda Abney, director of the EarthWays Center. Presented by the Garden and the Science Center, Science Café offers stimulating conversation in an informal setting each month. Free at Monarch Restaurant, 7401 Manchester Rd. Visit www.slsc.org for more information.

photo by Ryan Rumberger

Holiday Wreath Exhibit

Friday, November 21 through Sunday, January 4, 2009
Wreaths by the area's finest floral designers deck our walls—and yours too, should you bid on one in the silent auction to benefit the Garden.

☺ = fun for families
✿ = members' event

November
2008

average temperature: 45.25°
average monthly precipitation: 3.71 in.

What's in bloom?

download the podcast at www.gardeninghelp.org

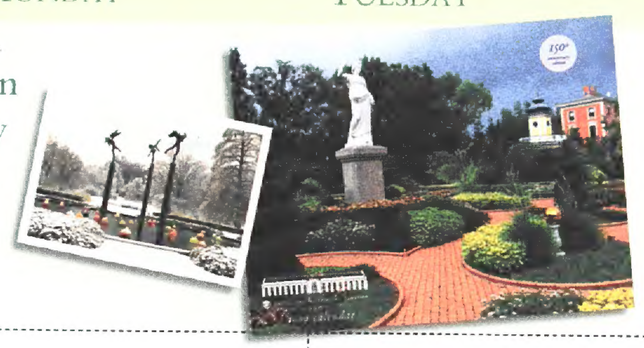
pansies

burning bush

ornamental grass

fall foliage

Japanese pine

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Purchase your Garden calendars and holiday cards now at the Garden Gate Shop! 				**Gift of the Garden** Just in time for the holidays, purchase family, regular, and senior-level gift memberships for 20 percent off, November 5–9 and December 3–7 at the Membership Services Desk. Discounts are for on-site sales only.		01 New Member Orientation, noon, ST
02	03	04 Garden Buds: What Are You Doing This Winter? 9:30 a.m. to noon. SNR $ ☎	05 Members' Day: Holiday Decorating, 11 a.m., ST Members' 20% off sale, GGS and LS Greening Your Small Business, 6:30 to 9 p.m. EWC $ ☎	06 Members' 20% off sale, GGS and LS	07 Members' 20% off sale, GGS and LS Ethnobotony booksigning, 5:30 p.m., GGS Camp Bugaloo: Spring. 10 a.m. to noon, BH $ ☎	08 Members' 20% off sale, GGS and LS
09 Frog in the Clouds. 3:30 p.m. COCA. $ ☎ Members' 20% off sale, GGS and LS Camp Bugaloo: Spring. 12:30 to 2 p.m. BH $ ☎	10	11 VETERANS' DAY	12 "Tibetan Herbal Medicines and Climate Change" by Dr. Jan Salick, 7 to 9 p.m. MC $ ☎	13 Native Plant School: Native Trees in Winter. 1 to 4 p.m. SNR $ ☎	14	15 Discover Nature Families: Who Lives Here? 9:30 to noon, SNR Public Tour Days. EWC
16 Public Tour Days. EWC	17	18	19	20 Science Café: "Finding Sustainability," 6:30 to 9 p.m., Monarch Restaurant, 7401 Manchester Rd.	21 Holiday wreath exhibition	22 Bascom House holiday décor through Jan. 4, SNR
23	24	25	26 Gardenland Express, annual holiday flower and train show. RC $	27 THANKSGIVING	28	29
30						

photos by Jack Jennings, Heather Marie Osborn, Tamara Rhodes, and Linda Sanders

December Events

Visit www.mobot.org for the latest information.

photo by Leslie Wallace

Christmas Carols in the Garden

Saturday–Sunday, December 13–14, 1 to 5 p.m., Garden grounds

Santa in his sleigh, musicians and carolers, and roasting chestnuts—it's all part of this celebration of the sounds of the season. Five choirs, a brass ensemble, a jazz combo, and a harpist will perform throughout Garden grounds. Mulled cider, hot chocolate, and cookies will be available for purchase, and the Garden Gate Shop will be open for holiday shopping. Don't miss this year's special display of gingerbread houses. Regular Garden admission rates apply (free for members).

Members' Holiday Concert

Saturday, December 13, 11 a.m., Shoenberg Theater

Join us for a holiday sing-along. The St. Louis Metro Singers is a talented ensemble of over 90 voices from the St. Louis region. Seating is first-come, first-served.

Victorian Christmas at Tower Grove House

The Victorian country home of Garden founder Henry Shaw will be decked out with wreaths, garlands, floral centerpieces, greenery, and a holiday tree the month of December. Young visitors can be on the lookout for old-fashioned toys hidden throughout the house. Open Tuesday through Saturday, 10 a.m. to 4 pm; Sunday 1 to 4 p.m.; closed Mondays.

Holiday Trimmings at the Kemper Center

Don't miss the stunning 15-foot balsam fir in the Kemper Center for Home Gardening featuring creative decorations made from gourds and other natural materials grown in the Garden.

Breakfast with Santa

Saturday, December 6,
8 to 10:30 a.m., Sassafras

He's making his list and checking it twice! Visit Santa and his helpers when he stops at the Garden. Bring a new pair of mittens or a child's hat to donate to charity. Menu includes waffles, scrambled eggs, bacon, hash browns, biscuits, and mini-pastries, served with milk, orange juice, and coffee. Tickets are $16 per person (children two and under are free). Seating is first-come, first-served. For reservations, call (314) 577-9570 or visit www.mobot.org/membership.

Chanukah: Festival of Lights

Sunday, December 21, noon to 4 p.m.,
Ridgway Visitor Center

This traditional Jewish holiday celebration includes Israeli music and dance, a menorah-lighting ceremony, and Chanukah merchandise.

Kwanzaa: First Fruits

Tuesday, December 30, noon to 4 p.m.,
Ridgway Visitor Center

This contemporary African-American holiday features a harvest feast table, with storytelling, and authentic African drumming and musical performances.

☺ = fun for families
✿ = members' event

photos by Leslie Wallace

Gift of the Garden

Just in time for the holidays, purchase family, regular, and senior-level gift memberships for 20 percent off, November 5–9 and December 3–7 at the Membership Services Desk. Discounts are for on-site sales only.

Also take advantage of the holiday sales in the Garden Gate Shop.

December
2008

average temperature: 33.9°
average monthly precipitation: 2.86 in.

What's in bloom?

download the podcast at www.gardeninghelp.org

powder puff

eastern witchhazel

poinsettia

Christmas cactus

holly berries

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01 Gardenland Express and holiday wreaths through Jan. 4. $	02 Members' Preview: Gardenland Express, 5 to 8 p.m., RC	03 Members' 20% off sale, GGS and LS	04 Members' 20% off sale, GGS and LS	05 Yoga for holiday stress. 1 to 3 p.m. MC $ ☎ Members' 20% off sale, GGS and LS	06 Members' Breakfast with Santa, 8 to 10:30 a.m., Sassafras Holiday evergreen basket. 10 a.m. to noon. RC $ ☎ Members' 20% off sale, GGS and LS
07 Members' 20% off sale, GGS and LS	08	09 Improving Energy and Comfort at Home. 6:30 to 8 p.m., EWC $ ☎	10 "The (Evening) Primrose Path" by Dr. Peter Hoch, 7 to 9 p.m. MC $ ☎	11	12 Camp Bugaloo: Summer. 10 a.m. to noon, BH $ ☎	13 Members' Holiday Concert, 11 a.m., ST Christmas Carols in the Garden, 1 to 5 p.m. $
14 Christmas Carols in the Garden, 1 to 5 p.m. $ Camp Bugaloo: Summer. 12:30 to 2 p.m., BH $ ☎	15	16	17	18	19	20 Public Tour Days. EWC
21 Chanukah: Festival of Lights, noon to 4 p.m., RC Public Tour Days. EWC	22 Chanukah	23	24	25 Christmas The Missouri Botanical Garden is closed on Christmas Day.	26	27
28	29	30 Kwanzaa: Festival of the First Fruits, noon to 4 p.m., RC	31 New Year's Eve			

Key *(All events take place at the Garden unless otherwise noted.)*

CA = Cohen amphitheater
CL = Climatron lawn
GGS = Garden Gate Shop in RC
JE = Jordan Education Wing in RC
KC = Kemper Center for Home Gardening
SP = Spink Pavilion
RC = Ridgway Center
SS = Sassafras, the Garden's café in RC
ST = Shoenberg Theater in RC

Off-site locations:
BH = Butterfly House, (636) 530-0076
EWC = EarthWays Center, (314) 577-0220
LS = Little Shop Around the Corner, (314) 5
SNR = Shaw Nature Reserve, (636) 451-3512

Members-only event
☎ Reservations required, please see event d (314) 577-9400.
$ Fee

Missouri Botanical Garden Library
3 1753 00355 1709

photos by Glenn Kopp, Jennifer Meinhardt, Josh Monken, John Smelser, and Erin Whitton

Worried about highway construction?
The Garden is...

conveniently located off INTERSTATE 44

For latest directions, visit www.mobot.org.

General information

Hours

The Garden is open every day except December 25, 9 a.m. to 5 p.m. Parking is free.

General admission*

Adults age 13–64 ..... $8
Members and children 12 and under .... free

St. Louis City and County visitors, with proof of residency, receive a discount on admission and free admittance on Wednesday and Saturday mornings until noon (unless special event pricing applies).

**Special events require an additional fee.*

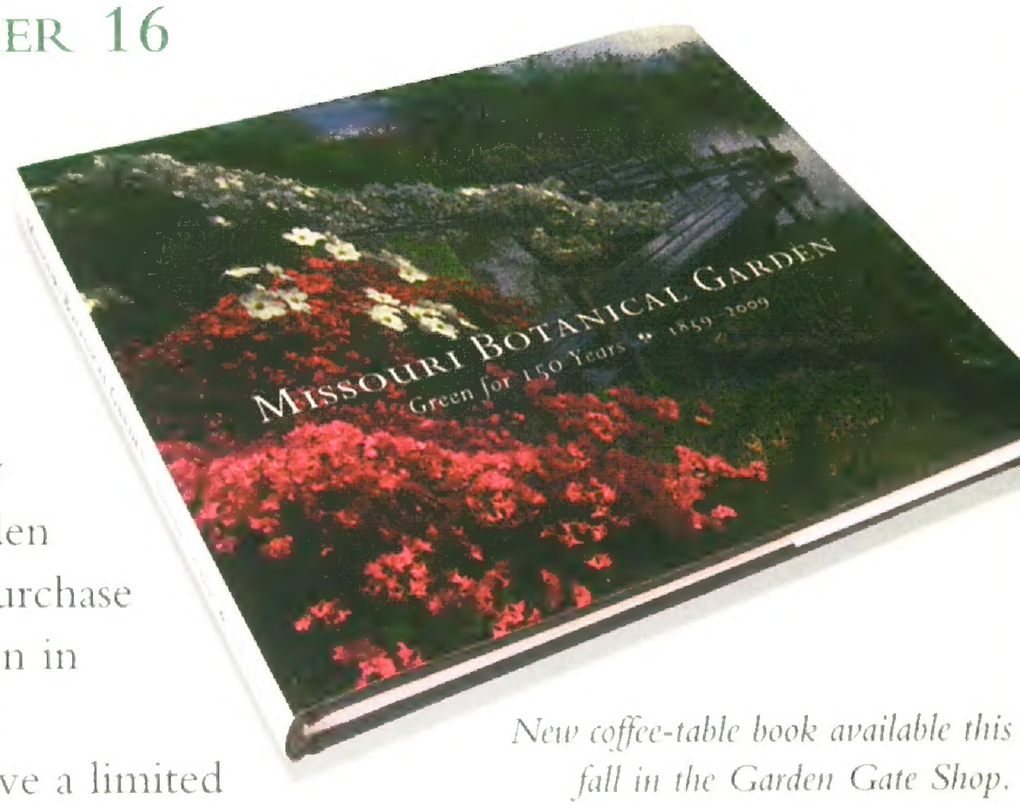
Phone numbers

General Garden ..... (314) 577-5100
Education ..... (314) 577-5140
Group Tours ..... (314) 577-0275
Membership ..... (314) 577-5118
Institutional Advancement .... (314) 577-9500
Hort. Answer Service ..... (314) 577-5143
Volunteer ..... (314) 577-5187
24-Hour Event Hotline ..... (314) 577-9400

Off-site locations

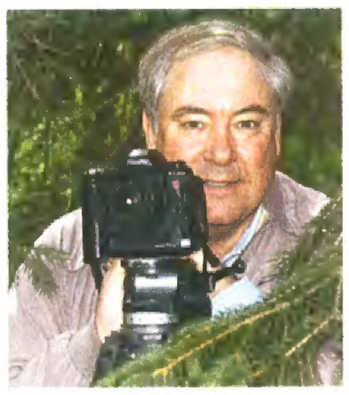
Butterfly House ..... (636) 530-0076
EarthWays Center ..... (314) 577-0220
Shaw Nature Reserve ..... (636) 451-3512

The Garden Book: Available October 16



New coffee-table book available this fall in the Garden Gate Shop.

The perfect holiday gift, *Missouri Botanical Garden: Green for 150 Years* is a stunning coffee-table book featuring rare archival photos and the photography of nationally renowned garden photographer Ian Adams. Purchase your commemorative edition in the Garden Gate Shop with collector's slipcase and receive a limited edition print (while supplies last).



Ian Adams

Members' Event:
Ian Adams Presents...the Garden

Thursday, October 16, 11 a.m., Shoenberg Theater
Learn how photographer Ian Adams braved terrible weather and pre-dawn start times to create the stunning photography of the Garden's new book. Book signing follows.

Workshop with Ian Adams

Friday–Saturday, October 17–18
Nationally known garden photographer Ian Adams presents a 2-day, hands-on photography seminar during the peak of fall color at the Garden. $258 ($210 for members). Registration required; call (314) 577-9441.

GARDEN GATE SHOP
(314) 577-5137
9 a.m. to 5:30 p.m. daily.
Members 10% off every day,
20% off on members' days.

LITTLE SHOP AROUND THE CORNER
(314) 577-0891
10 a.m. to 4 p.m, Tues–
Members enjoy discoun
Donations welcome.

sassafras (314) 577-9516
First Certified Green Restaurant™ in Missouri!

CATERING ST. LOUIS
(314) 577-0200
Now booking 2009 parties and events at the Garden.

Missouri Botanical Garden
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Credits

Editor: Elizabeth McNulty
Designer: Ellen Flesch
Cover photo: Gardenland Express.
Photo by Josh Monken.
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The *Bulletin* is a benefit of Garden membership.

The BULLETIN (ISSN 0026-6507) is published quarterly by the Missouri Botanical Garden, 4344 Shaw Blvd, St. Louis, MO 63110.
Periodicals postage paid at St. Louis, MO.

Postmaster: Please send address changes to:
Bulletin, Missouri Botanical Garden,
P.O. Box 299, St. Louis, MO 63166-0299.

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